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The Summer Life of the Virginia Rail

By VERDI BURTCH, Branchport, N. Y.

With photographs by the author

ARRIVING in the marsh at Branchport, N. Y., the last week in April, the Virginia Rail at once makes itself at home, and its grunts and calls can be heard every day from all parts of the marsh. Keeping close in the grass and flags it is seldom seen, but when disturbed it utters a sharp *kep'* and then a grunting noise which is very like the grunting of a pig calling for its dinner. This note is uttered by both sexes. Early in May in the evening and in lowery weather we hear the love-song of the male, *kid kid-ic kid-ic kid-ic kid-ic kid-ic*, he says, then moves along a little way and repeats, *kid kid-ic kid-ic kid-ic kid-ic kid-ic kid-ic*, sometimes keeping it up for hours at a time.

The nesting habits of this beautiful Rail are very interesting, but to study them successfully requires much patience on the part of the observer. A site is chosen in a tuft of grass around the edge of the swamp or near a bunch of bushes. Sometimes it is in a low bush or in a bunch of dead weeds, and again it will be out in the water in the cat-tails. The nest itself is of dead grasses and flags and is cunningly concealed by arranging the dead grass and flags about it in a very natural manner. Later, the growing grass and flags conceal it very effectively. If one gets near the nest he is almost sure to hear the note of alarm and the grunting of the birds as they move rapidly around through the weeds.

On May 11, 1908, the eggs were just beginning to hatch in a nest that I had found some few days before, and, as I approached, the female slipped from the nest and away through the cat-tails. She was quickly followed by the two little ones, although they were but a few hours old. The nest was surrounded by water so the birds had to swim, but even then they managed to elude me. Hoping to get a picture of the nest and eggs I set up my camera, and, while focusing, the mother appeared, carrying one of the little ones in her bill, dropped it into the nest, went on, and settled down to brood.

This habit of leaving the nest (when disturbed) so soon after they are hatched makes the young very difficult to photograph. However, this can be accomplished by leaving the camera set up and focused on the nest, returning cautiously after an hour or two, when they will have come back to the nest; or the shutter can be released by attaching a thread to the release lever and running it back to some convenient place from which the nest can be seen. The surroundings of the nests preclude one's getting but glimpses of the adults as they scamper about the nest. Last May we were fortunate enough to find a nest in a bunch of sweet flag which stood alone in a rather open place so that the bird had to cross the open when going to and from the nest. On my first



FAILING TO CALL HER YOUNG TO HER SHE CAME AND PICKED ONE FROM THE PIT AND CARRIED IT AWAY INTO THE FLAGS

visit the female left the nest as soon as I came near and ran across into the flags, where she kept running from cover to cover, showing herself but a few times and giving me no opportunity for a picture.

June 13 I was more fortunate. This time she left the nest as before but returned at once, coming at me with wings drooping and feathers ruffled. This she did again and again. She would come right up to and strike the camera. She moved so quickly that it was impossible to keep her in focus, but focusing on a point about four feet away, and following her with the lens until she came in focus, several good pictures were secured.

She came out from cover time after time, running at me with wings drooping and feathers ruffled, and seemed determined to drive me away. I could easily bring her to me by giving the flags by the nest a little shake, when she would give little grunts and run right up to the camera. To catch her with wings drooping was a task. She came so quickly and so close, her image grow-

ing rapidly until it covered the ground-glass as she jumped up and struck the camera.

June 17 the eggs were beginning to hatch, and there were six silky, black little ones in the nest. Three of them followed the mother when she left the nest and hid in the flags around its base. The three others were not yet dry and with their bright eyes shining lay kicking and struggling to get out of the nest. Soon the mother came back calling softly *ka ka ka ka ka*, and the young ones left their hiding-place and ran to her. One of them fell into one of my



EGGS AND NEWLY HATCHED YOUNG OF VIRGINIA RAIL

foot-tracks, and the mother came quickly and, taking it up, ran off into the flags, carrying it dangling from her bill as a cat carries her kittens. The male now showed himself for the first time. He kept close to the outlying cover, scolding as he dodged in and out among the flags and grass.

Next day as I approached, the female was on the nest brooding and the male began to scold from the cover. A few times he came out and charged at me with wings drooping but did not come close like the female. When the female left the nest, the young (and there was now a nestful) immediately followed, scattering and hiding in the grass. There was now but one egg left unhatched, and the chick came out of it twenty minutes later. Soon after



WHILE FOCUSING MY CAMERA, THE MOTHER APPEARED CARRYING ONE OF THE LITTLE ONES IN HER BILL, DROPPED IT INTO THE NEST AND THEN SETTLED DOWN TO BROOD IT.

leaving the nest the mother came back and called softly, when, as if by magic, little animated balls of black appeared to spring up all around and roll to her. I caught ten of them, and, putting them into one of my foot-tracks in the soft mud, they remained quietly until the mother came and called, then, peeping faintly, they tried to climb out. Failing to call them to her, she came and picked one from the pit and carried it away into the flags. I followed at once but before I could catch up with her she had dropped it and came back to meet



WHEN FEEDING THE MOTHER CAME OUT ON THE MUD, A YOUNG ONE
FOLLOWING HER

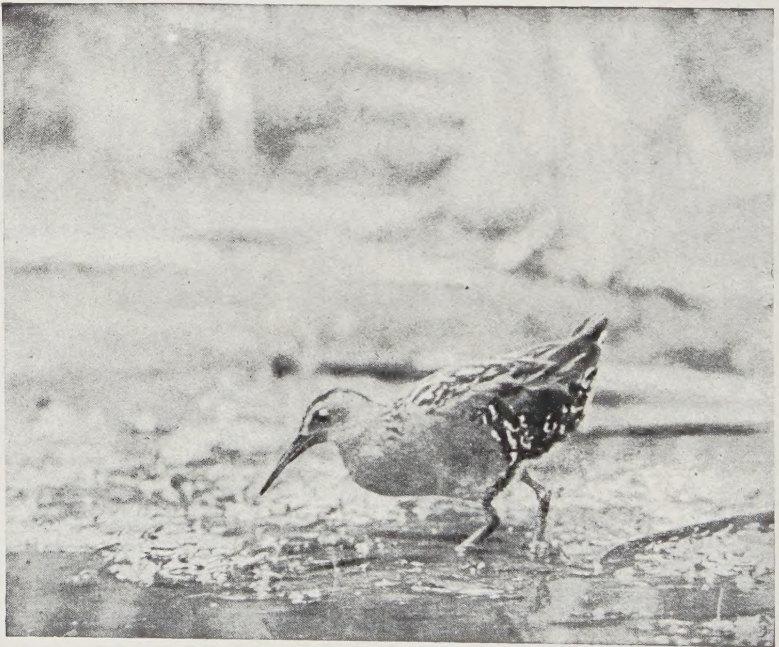
me. I found the little one where she had dropped it, lying on its back kicking and struggling to rise. Again she came and carried another one away, then came back and called softly *kiu kiu kiu kiu*, ending with the grunting noise. Two of the little ones managed to climb out and ran toward her when, calling as she went, she led them into the flags where she remained quietly for some time. During all of this time the male kept to cover, showing himself but a few times as he dodged in and out among the flags. The young are born with their eyes open and gain strength so rapidly that they are able to leave the nest before they are fairly dry. They are covered with long, silky, jet-black down, rather thin on the top of the head and on the wing where

the flesh shows through. The outer digit of the wing is armed with a tiny claw, and they use the wing and claw to help themselves over obstacles and in climbing into the nest. The bill is fleshy horn-color with a black ring around the middle, the tip being white on the upper and black on the lower mandible.

Later in the day the female met me about three rods from the nest, and no little ones could be found except the one last hatched which was still in the nest. A few days later none of the family was to be found.

Late in July both parents and young will be found on the muddy shore where they feed and dodge back into the flags at the least sign of danger. At this time the young are about half grown and still keep their downy appearance. When feeding, the mother comes out on the mud, a young one following, and when she finds a choice morsel it is there to receive it. Back in the flags the other young are following, uttering plaintive peeps. As soon as one is fed it returns to the flags and another one comes out to take its place.

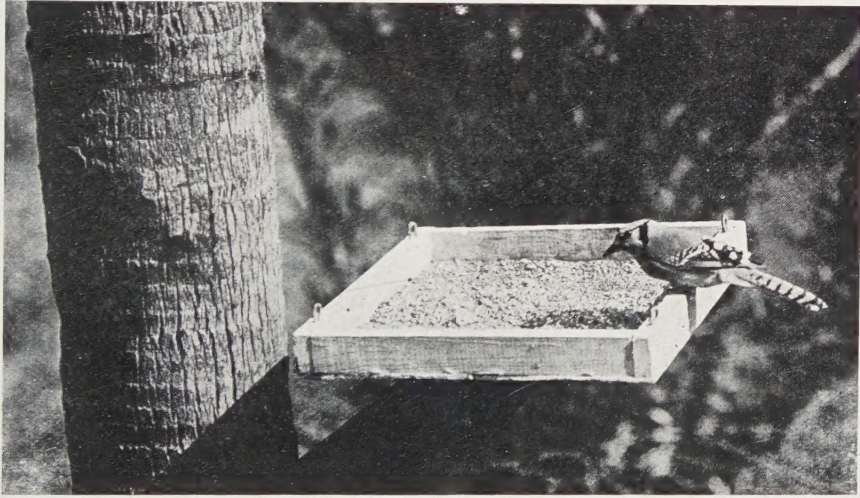
Here on the mud and in the flags they can be found every day, the young developing rapidly, the down giving way to black and dark brown feathers, until early in October when they leave for the South.



VIRGINIA RAIL, FEEDING



A MARQUETTE (MICH.) BLUE JAY



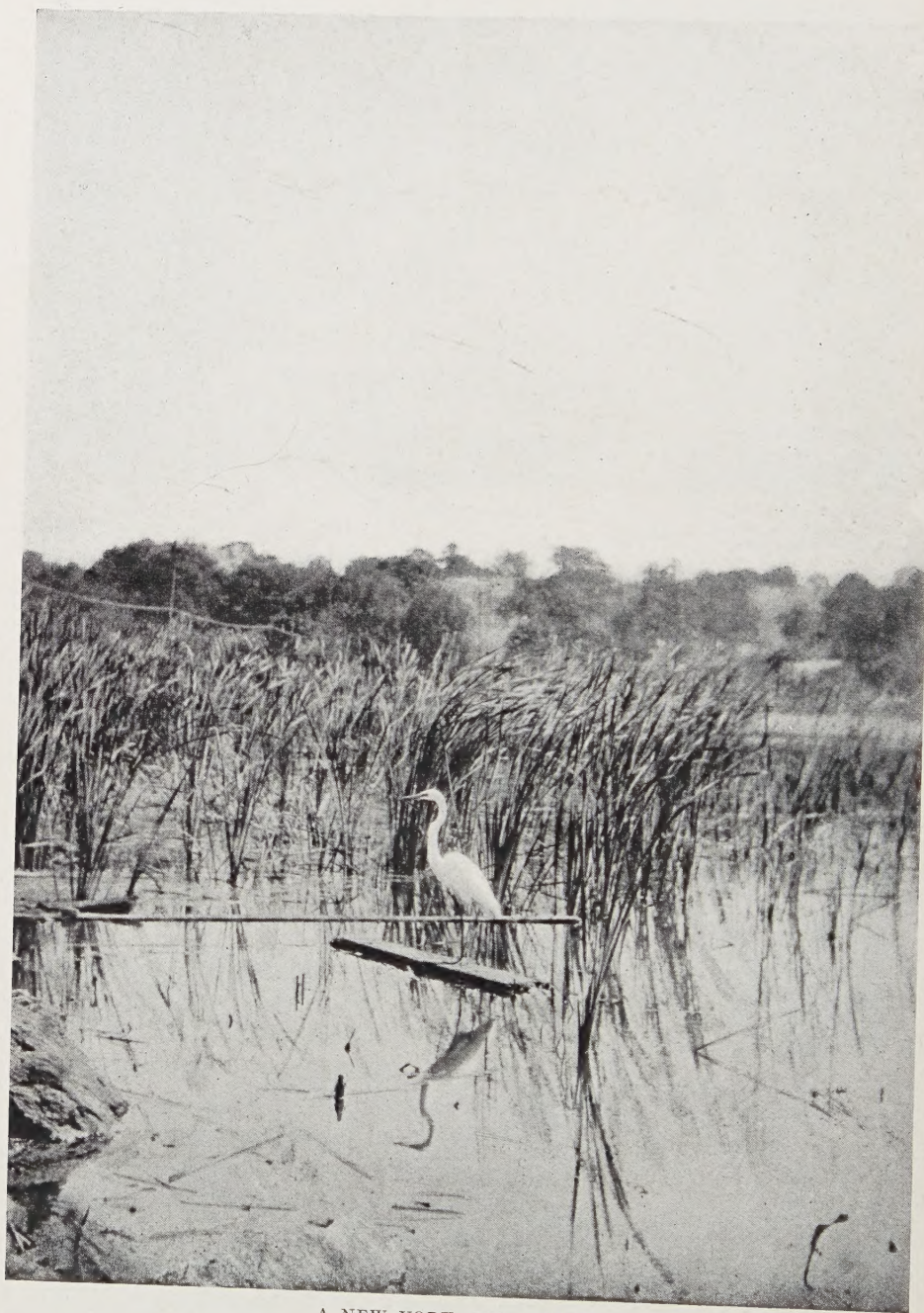
AN ORMOND (FLA.) BLUE JAY.

Two Blue Jay photographs by George Shiras, 3d

[The last photograph made by Mr. Shiras before leaving his summer home at Marquette, Mich., in October, 1916, was of a Blue Jay at his feeding-stand beneath the balsams.

The first photograph he made after reaching his winter home at Ormond, Fla., was of a Blue Jay at his feeding-stand under the cabbage palms.

The Blue Jay is migratory only to a limited extent at the northern limit of its range, and this incident illustrates its wide distribution and the strikingly different conditions under which the species lives. Hence, we have two races, a large, pale Northern Blue Jay, and a smaller, darker Florida Blue Jay. The differences in color between the two forms can be seen in the photographs.—ED.]



A NEW YORK CITY EGRET

American Egrets in New York City

By CLARK L. LEWIS, JR., New York City

With a photograph by the author

LAST summer (1916) three beautiful American Egrets (*Herodias egretta*) made their appearance in Van Cortlandt Park, New York City. They were reported to have arrived on July 16. As the neighborhood appealed to them, they settled down in the vicinity of the pond, at the southern-most extremity of the Park, and remained for a number of weeks. The birds finally disappeared, one by one, the first to leave quitting the Park sometime around August 10, the next, a few days later, and the remaining Egret on October 10. Their roosts were located somewhere in the northern part of the Park woodlands, just where I do not know. At the approach of dusk the Egrets would rise into the air and fly northward. Their flight was slow and graceful, and often I would watch them until they were lost from sight in the darkening horizon. Every morning found them back at the pond where they spent the long summer days, feeding upon small fish, insects, and other forms of Heron food.

The neighborhood of the pond seemed far too civilized and noisy to warrant any length of stay for these birds, whose habitual haunts are semi-tropical swamps and marshes. The pond is bordered on the north by a much-used automobile road-way, on the east by a branch line of the New York Central Rail Road, on the west by Broadway with its noise of passing vehicles, Subway trains, trolley cars and never-ceasing crowds of pedestrians, and on the south by a small strip of land which boasted of a few trees and wild vegetation. Tall grass formed a border around the pond. The water was practically open and thus afforded the Egrets plenty of room to move about.

However, this change of atmosphere and surroundings did not seem to trouble these beautiful white creatures, but made them rather unsuspecting and fearless. Excellent observations of the birds, some as close as eight to ten feet, were obtained. On September 9 I took several photographs of the remaining bird. The one shown here gives a characteristic pose.

[To one who has known the Egret when every man's hand was raised against it, and nearly every woman's head bore the aigrette plumes which gave eloquent, if silent, testimony to her heartlessness, it is as surprising as it is pleasing to observe that under proper protection this beautiful bird may again become a part of our lives.

In a vain effort to rob it of protection in New York, the milliners' agents claimed that the Egret did not belong to the fauna of that state, but the photograph and observations of Mr. Lewis are welcome evidence to the contrary. (See also Mr. Rogers' note on page 276.)—ED.]

Nesting Habits of the Cliff Swallow

By MANLEY B. TOWNSEND, Nashua, N. H.

IN a former issue of BIRD-LORE I asked the question, "Do Cliff Swallows ever build upon painted barns?" That the query was of more than ordinary interest is attested by the many letters I have received bearing on the subject. Believing that the readers of BIRD-LORE will welcome the results of this correspondence, covering a wide territory, from New Brunswick to Oregon, I am boiling down and digesting the important facts and here offer them for comparison and study. The value of coöperative effort in determining any fact is here clearly demonstrated. Local conditions often cause local habits. Only comparative study over a wide area can give conclusive testimony.

Wm. J. Cartwright of Williamstown, Mass., writes: Up in the hill town of Savoy, Mass., a typical backward New England farm community where I chanced to visit this past summer, I found great numbers of these birds. One colony had thirty nests and another twenty-eight, all of which had young birds in at the time. Others had fifteen or more nests and the remains of many former nests. In every case they were on unpainted barns. In one case the farmer had accumulated enough money to paint three sides of his barn, yet the colony of about thirty pairs of Swallows still built their nests on the remaining unpainted side where they have built for a number of years. It will be interesting to see if, when the remaining side is painted, they seek new quarters.

But I did find one exception. On one painted barn I found five nests, three of which were occupied. The barn was built of rough unfinished boards and painted red. They were on the east side of the barn, directly over the barnyard, where the old birds spent a good deal of their time catching the many insects about the damp yard. It is significant that this was an exceptionally small colony for that locality, all others being at least three times as large. Several hundred yards on either side of this barn there were unpainted barns, but there were no nests of Swallows on them. These barns were on abandoned farms, or were used for the storing of hay, and so no cattle were about them to draw the food-supply of the Swallows.

Has anybody else noted a like circumstance in regard to these Swallows and their nesting-places?

Mrs. G. E. Barton, of Holland Patent, N. Y., writes that when she was a child in a pioneer town, from 1876 to 1880, at Glyndon, Minn., she used to see "thousands of Cliff Swallows' nests on painted buildings. The N. P. R. R. reception house was 200 feet long and painted white. It harbored Swallows the whole length, and sometimes nests overlapped. The same was true of the schoolhouse and other buildings." It is not stated whether or no the boards to which the nests were fastened were painted.

Rev. Geo. Roberts, Jr., of Lake Forest, Ill., writes that "a colony of Cliff Swallows have for years nested under the inner eaves of the large piazza of a hotel in the Adirondacks, New York state. The hotel is an old structure, painted white. The nesting is of annual occurrence." On inquiry, Mr. Roberts was unable to recall whether or no the eaves against which the nests were plastered were also painted.

Mrs. J. F. Merrill, of Northwood Narrows, N. H., reports two colonies on painted buildings, one on a white schoolhouse and another on a red barn.

Althea R. Sherman, of McGregor, Iowa, writes about a barn built seventy years ago on which the Cliff Swallows formerly built three rows deep. The building has been remodeled and painted. Six years ago only five or six nests remained, and the last time visited there was but one nest. The species is reported very scarce in that section of Iowa, and its scarcity is attributed to "that miscreant, the English Sparrow." There is probably much truth in this explanation. Personally, I have known the English Sparrow to take possession of the nests of the Cliff Swallows, though not very often. In some parts of the country, however, they may be more troublesome. I used frequently to pass a large colony of Cliff Swallows, the nests of which were built on an unpainted barn near Sioux City, Iowa, where the English Sparrows were abundant. This is a point that will bear further investigation. Who has any information upon it?

Mrs. Emma P. Farr writes of a small colony of Cliff Swallows nesting last year on a painted ice-house near Union Village, Woonsocket, R. I. "The painting was done with yellow ochre, mixed with oil. The birds have not returned this year, and early in the fall last year's nests had all fallen off." Mrs. Farr asks if nests on unpainted buildings drop as easily. To this query an emphatic negative may be given.

Mary E. Raker, thirteen years of age, writes an interesting letter from Portland, Ore., showing keen observational powers in one so young. She reports one nest built against a gray house under the eaves of the gable end. There were a few unoccupied nests from previous years.



BARN SWALLOW TURNING
Photographed by A. A. Allen, Ithaca, N. Y.



BEFORE THERE WERE BARNs. NESTS OF CLIFF SWALLOWS IN RUSH COUNTY, KANSAS
Photographed by S. W. Williston

Mr. Howard H. Cleaves writes from the Public Museum, New Brighton, N. Y., to the effect that he has observed a colony of a dozen pairs of Cliff Swallows on a set of farm buildings at East Jewett, N. Y. "Three or four of the nests are under the eaves of an old barn which has no paint, but the remainder are attached to a smaller outbuilding which wears a yellow coat." Mr. Cleaves also reports two pairs of these Swallows breeding on a red barn between Boardville and Erskine, N. J. "The paint was scarcely more than a stain. One nest was attached to timbers that had been treated with this stain, the other was located on an untouched area." In June, 1911, Mr. Cleaves noted "three or four nests of Cliff Swallows attached to a stucco barn or shed at Lenox, Mass." He also calls attention to a reproduction of a photograph taken by Fred B. McKechnie of a colony of Cliff Swallows at Lunenburg, Vt., and published on page 341 of the March, 1914, issue of the *National Geographic Magazine*. The building on which the colony is located is obviously painted, though a narrow moulding nailed along the side of the structure insures the nests against disaster by falling.

Mrs. Al. Bayhouse, president of the Idaho Audubon Society, reports a colony of forty-two nests of Cliff Swallows built under the eaves of a barn at the Soldiers' Home at Boise. The barn is painted 'dark red, trimmed with white, and the nests "were on the white boards under the eaves." There were about three hundred birds in the colony. Mrs. Bayhouse also reports one occupied nest on a white house last year, and another on "a barn painted some dark shade."

One of the most interesting reports was from Dr. Guy C. Rich, of Los Angeles, Cal. Dr. Rich, who was for many years the leading ornithologist in northwestern Iowa, says that he has found the Cliff Swallows nesting in the sand-pits along the Big Sioux River near Sioux City, Iowa. I quote from his letter—"While you make inquiries about the choice of painted barns for Cliff Swallows, ask if anyone has noticed them breeding along with Bank Swallows in a dirt bank. I am not sure that you ever visited the sand-pits up on the Big Sioux, but I saw the small mud pellets plastered along the entrances of several holes and found the eggs in some of the burrows." This is truly a unique observation. Has this been noted by anyone else?

Now for my own personal observations this summer of 1916. I have examined with great care thirty-four colonies and here append the result of my investigations. The nests were located in New Hampshire, Maine, and New Brunswick. Five of these colonies were on painted edifices and all the rest—twenty-nine colonies—on buildings innocent of any evidence of ever having been painted. Several of the colonies on unpainted barns were very large, many of them comprising from three hundred to four hundred birds.

Of those on painted buildings, the following facts will be of significant interest. On a large painted barn at St. John, New Brunswick, a large colony had built upon a supporting cleat under the eaves. A similar case was observed

at Machias, Maine, where a large colony had built on a painted barn, the nests supported by a wide cleat. A painted outhouse in Kennebec, Maine, had a few nests under its eaves. At China Lake, Maine, forty nests were noted stuck on the unpainted boards of a dark red barn. Most of the paint had worn off. A painted schoolhouse in Northfield, Maine, had a half-dozen nests plastered under the painted eaves, but the boards were noticeably rough, affording a good clinging surface. The scars of several nests on the smooth painted boards of another schoolhouse in Wesley, Maine, were noted. The site had evidently been abandoned as unsafe. It may here be noted that last year I observed a painted barn and a painted hall, both in New Hampshire, upon both of which were the scars of Cliff Swallows' nests. The birds had not repeated the experiment.

At a certain farm a set of five buildings, three painted and two unpainted, had nests on the two unpainted buildings and none on the others, although (excluding the house) they were apparently as well suited for nesting purposes as those chosen.

An interesting observation was made at an abandoned farm in Washington County, Maine. Both Cliff and Barn Swallows were abundant. Hundreds of both species were nesting *inside* the big barn, a smaller building, and a lean-to shed. Has anyone else ever noted the Cliff Swallows nesting inside buildings? The nests were built precisely as usual when located under the eaves—bottle-shaped, with entrance at the lower end. They were attached to the rafters.

The facts here given, covering a belt of territory reaching from ocean to ocean, may be thus summarized:

1. Cliff Swallows prefer unpainted buildings, and the greater number of colonies are found thus situated.
2. These birds frequently choose a painted building if there happens to be a supporting cleat under the eaves. Some farmers especially provide such an accommodation. The colony may be large in such a case.
3. When the space under the eaves is left unpainted, the Swallows do not object to painted buildings.
4. Birds that nest in colonies are very tenacious of their ancient breeding-places. They will often accommodate themselves to changed conditions that would ordinarily repel them. When the mangroves in which the Pelicans nested on Pelican Island, Fla., were destroyed, the birds built upon the ground rather than leave their ancestral homes. The tall pines near Nashau, N. H., in which a large colony of Black-crowned Night Herons nested were cut down last year. The birds simply moved a few rods away to small pines in a much less favorable situation. When an unpainted building long occupied by Cliff Swallows is at last painted, the birds are extremely reluctant to leave and will continue to breed there unless repeated disaster by the falling of the nests forces them away, as some woodland plants will continue to grow in the open after the forest shelter has been removed.

5. Colonies on painted buildings, with the nests attached to painted boards, are not unknown, especially if the boards are rough. Colonies thus situated are usually small—from one to a half-dozen nests—occasionally a few more.

6. Nests built against paint drop off easily and discourage the return of the birds. On unpainted buildings the nests usually persist and are generally repaired and used for two or more successive years.

7. Cliff Swallows have been known to breed in the abandoned burrows of Bank Swallows and to build inside, as well as outside, farm buildings.

8. The English Sparrow is a nuisance. His continued presence has a tendency to reduce, if not to completely eliminate, the Cliff Swallows. He should be exterminated.

Remarks on the Nesting Habits of Swallows

By ARTHUR H. NORTON, Portland, Maine

DO Cliff Swallows ever nest on painted barns (or buildings)? is a question asked of BIRD-LORE readers, to which I answer "They certainly do." Why they so seldom nest on painted structures in the Northeast, is probably due to the same old reason why black sheep eat less than white sheep, or because there are less of them. The practice is, I feel sure not exceptional, yet the case is one of those in which I can cite but few instances with absolute certainty, nor can I with equal certainty recall more than three unpainted structures upon which Swallows nest, though I have observed many nesting colonies.

At White Head Island, Knox County, Maine, a United States Life Saving Station was built in 1874, with rafters supporting long eaves, finished with panels. Like all other stations and lighthouse establishments, this was kept heavily coated with white paint. On the Island at the time was a large old barn, with eaves formed by butts of shingles only, and unpainted. I had never known the Eave Swallows to nest on it, nor on the old-fashioned house near it, but the birds soon discovered the new station with its long eaves and formed a large colony there, where they remained for many years, or until the old eaves were remodeled, joining a shed-roofed boat-room on one side. I have not seen the house for some years, and do not know whether the birds still find a nesting-place there.

The dirt of this large colony of Swallows on the otherwise immaculate building, was a source of irritation, to say the least, to the keeper, my father, and each year the resolution to prevent their occupancy was announced, but through his sympathy for the birds and my own pleading for them, they were allowed to remain. My father's house on the same island, also painted white, was occupied by a smaller colony of the birds.

These Swallows are very partial to the immediate vicinity of the sea, where

the warehouses, barns, and fish-houses, on which they nest in large numbers, are seldom or never painted.

Though known as Eave Swallows, they are by no means confined to the eaves of buildings for nesting-places but not infrequently enter the buildings and nest on the rafters as the Barn Swallows do, though building their own covered nests. I recall several instances of this kind, notably the long rain-shed of the lighthouse establishment at White Head and the boat-house of the same place, where I knew them to nest year after year.

On the other hand, a pair of Barn Swallows departed from their nominal habit of barn nesting and built under the eaves of our house (on a little shelf) until ousted by the increasing colony of Eave Swallows.

When the old glass-sided box, with its perforated tin cone for ventilator, within which a lamp was carried, gave way to a more or less modern lantern, a knot was picked out of one of the ends of the barn loft, and the old glass-sided lantern fastened up over it, for a 'Martin house.' For, though the bird-house idea has recently engaged the attention of city men "to the westward," the settlers along the coast of Maine have had their 'Martin houses' for three or four generations, and they were as much a part of the well-ordered 'place' as was the bed of bright flowers of European origin brought over by the great grandmothers of an earlier generation.

Surely, "Westward the course of empire takes its way," even with bird-houses! Nor has the old custom been forgotten in this generation of urban invasion, for many of the old farms along the country roads, and even the temporary camps of fishermen on the outer islands, still support 'Martin houses.'

To return to the old lantern in the barn loft, though its glass sides were objectionable to its intended tenants, it was usually occupied. One year it was taken by a pair of Barn Swallows, who certainly raised one brood in it. The nest, like that of the Tree Swallow was *without mud*.

On Matinicus Seal Island, though several open fish-houses existed and were occupied by Barn Swallows, one pair nested for some years (perhaps yet) on a niche of a wall of rock. I found the nest in June, 1896, containing four eggs, and remarked that it was but a few feet above the surge of the breakers. The nest was of the usual type.

On our coast the Tree Swallows are commonly known as 'Martins,' and are abundant, nesting in the numerous hollow stumps, hollow limbs, and tree trunks, and in niches in buildings affording a dark retreat.

Prostrate hollow logs dying in the open on the ground often are used as nesting-places. One of my earliest recollections is of an old wooden pump laid on the ground in a pasture, which was occupied as a breeding-place by a pair of these Swallows for several years. They are the ready and almost exclusive tenants of the coast Martin-houses already mentioned. Unlike their kin, they do not form colonies, being jealously watchful and pugnacious toward all birds of similar nesting-habits, including their own kind.

An Experience with a Robin

By MRS J. L. HARRINGTON, Altamont, N. Y.

With photographs by the author

ONE evening just about dusk during the first week in June we discovered that our neighbor's cat had a little baby Robin cornered ready to pounce upon it.

We took the poor frightened bird and placed it on the barn roof in hopes that the old birds would come and care for it. But it was fast getting dark and they never came. Knowing that the cat would have the little Robin before I would be up in the morning, I fed him and put him in a basket partly filled with hay for the night.

The next morning I opened the basket and fed him a worm or two and some bread and milk. Then he tried to tuck his head under his little wing and went to sleep.

After he had had his nap we put him out where the old birds might see and hear him but they did not return. We had to care for him until he was able to



BOBBY ON ONE OF HIS DAILY VISITS

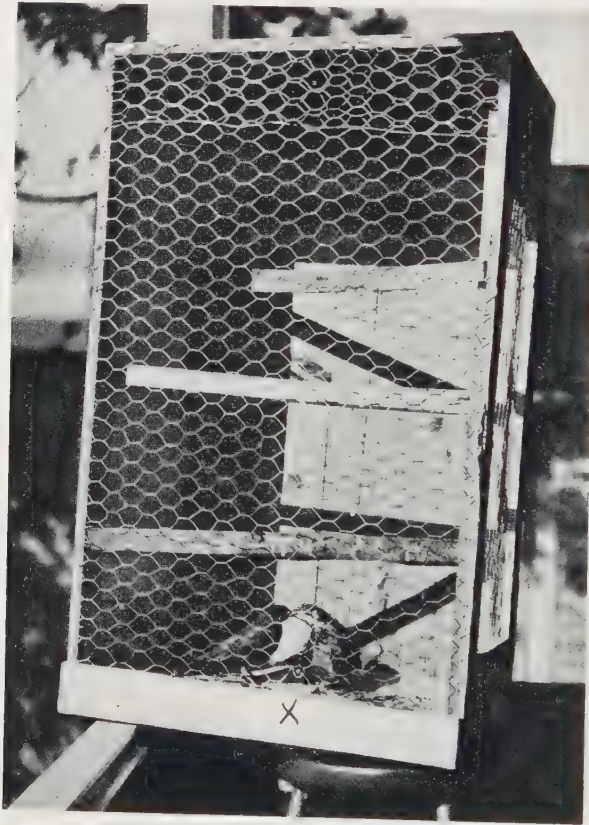
look out for himself. He was so young that downy feathers were still in his plumage and there was just a mere beginning of tail feathers.

My husband built a large airy cage for the little Robin, and we put him out on an upper porch, and he chirped, and ate and slept and grew like any healthy child.

The first day or two he kept trying to get out but he soon got used to his cage and was apparently happy. He learned to answer to the name Bobby and would chirp back every time we called him. At first he did not know how to pick up his food. He just opened his mouth and let us put the food in it. I would dip my finger in water and he would open his mouth and catch the

drops from my finger. After we had had him about two weeks he began to pick up food for himself though he still liked to have us feed him.

Just about this time my neighbor came running over with another baby Robin, which she had taken right out of the mouth of that same cat, and wanted to know if I would adopt it. This one was older than Bobby was when we got him, and was so frightened that he would not eat. I worked over him for a couple of hours but he would not open his mouth. At last, I tried to open it, thinking if I could only get one worm in he would eat. That frightened him



BOBBY FEEDING THE LITTLE BIRD

so he fainted away, so I gave up and put him in the cage with Bobby as soon as he became conscious.

Bobby was inclined to peck him at first, but by night had grown quite friendly toward him. The next morning Bobby didn't eat well. He kept taking food in his mouth but did not swallow it. I was occupied so could not wait to see what evidently happened. But from the sounds that came from the porch Bobby was feeding the little one.

After breakfast we went out to feed them some worms. The little one would not take a thing from our hands and did not know enough to pick them up. Bobby would take a worm and break it up in inch lengths and have his mouth full of the pieces but would not swallow. We were puzzled. Just then Bobby hopped up to the little one and pecked him twice on the bill. The little one opened his mouth and in went the pieces, one at a time.

From that time Bobby took entire charge of the little one and would not eat a thing himself until the little one was so full he refused to eat any more.

Bobby would still eat from our hands and twitter and flutter his wings just as the little Robin did when he fed him.

From the first week we had Bobby he would take a bath every day. The third day after we had the little Robin, when I put the basin of water into the cage he went right into it. Bobby hopped up on the perch nearby chirping and twittering and went through all the motions of drying his feathers though he was not wet a bit. I wondered if he were trying to teach the little one. They both enjoyed their bath and on real hot days went into the water two or three times.

They both looked alike and we could not tell whether they were both males or females. We fed them worms, cherries, berries, scraped beef, and bread and milk and they grew rapidly.

After we had had them six weeks we let them go as they seemed strong enough and old enough to care for themselves. The younger one having been bird-fed, flew away and we never saw him again; but Bobby came back every day and took his bath and let us feed and pet him.

The wild Robins were horrid to him. They would fly at him and even when he was within six feet of me they would fly down and pick out a bill full of his feathers. We never could understand why they disliked him so.

Every day I would go out into the garden and call Bobby and he would come flying down at my feet or alight in a branch near my head and take whatever I offered him or just talk to me in his bird language. He came to the upper porch, usually about 12.30 P.M., every day for his bath. He was so tame we were afraid the cats would get him for he did not watch out like the wild birds.

One day I saw the same cat that had caught them in the first place coming from the garden. I hurried out and called Bobby but he did not come and we never saw him again.



Notes on the Plumage of North American Birds

FORTY-FOURTH PAPER

By FRANK M. CHAPMAN

(See frontispiece)

Purple Martin (*Progne subis*, Figs. 1, 2).—As the plate figuring a pair of this species clearly shows, the adult male and female may be readily distinguished, but the young male, even in its first breeding plumage, cannot, at a glance, be distinguished from the female.

In its nestling, or juvenal plumage, the male is essentially like the adult female. This plumage it retains until after it leaves us for the South. Some time during the winter the postjuvenal molt occurs, and the bird acquires its first breeding plumage. This bears a general resemblance to that of the female but has a scattering of the steel-blue feathers of the adult male, which are more conspicuous in the gray underparts than above. At the succeeding molt, which also takes place after the bird migrates, and doubtless therefore in its winter quarters, the adult steel-blue plumage is acquired.

It is interesting to note that Martins and Swallows, birds which make extended migrations, leave for their southern homes before gaining the fresh set of feathers which we might imagine they would require before embarking on their long journey. Possibly their aerial habits leave their plumage so little worn, that even after breeding it is still serviceable and, unlike that of vegetation-haunting species, in condition to meet the demands made by migration.

The Eastern Purple Martin (*Progne subis subis*) is found locally throughout the United States and southern Canada, except on the Pacific coast where it is replaced by a closely related race, the Western Martin (*Progne subis hesperia*), the male of which resembles the same sex of the eastern bird, but the female is decidedly paler and whiter below than the female of *Progne subis subis*.

Gray-breasted Martin (*Progne chalybea*, Fig. 3).—The Gray-breasted Martin is a species of tropical America which ranges as far north as Texas. It is smaller than our North American Martin, but both sexes so closely resemble the female of that species that for many years Texas specimens of *chalybea* were considered to be Purple Martins. Their true identity was made known by Mr. W. De Witt Miller ('The Auk,' XXIII, 1906, p. 226).

Barn Swallow (*Hirundo erythrogaster*, Figs. 4, 5).—The male Barn Swallow averages brighter in color and, in some cases, has a longer tail than the female, but the sexes are often alike in color and size and cannot therefore be distinguished by external characters.

The young bird (Fig. 5) on leaving the nest is much paler below and duller above than the adult, and the outer tail feathers, which, when fully grown add so much to the appearance of the Barn Swallow, are not more than half an

inch longer than the central ones. However, they seem to answer all the requirements of successful aerial navigation. Not only are the young birds' first flights made with evident ease and precision, but, contrary to the rule among passerine birds, they migrate to winter quarters before changing this nestling plumage for their first winter dress. For this reason we do not yet know exactly when the postjuvenile molt occurs, nor do we know whether there is a spring or prenuptial molt.

Dwight records specimens from South America which were completing their molt in February, but whether it was a postjuvenile or prenuptial molt cannot be determined.

A specimen taken at Corumbá in southwestern Brazil, March 23, is in fresh plumage and has evidently just completed a molt, but no traces of the preceding plumage remain, and one cannot therefore say whether it was that of the adult or of the immature bird.

A specimen taken December 19 at Juntas de Tamaná in western Colombia, still wears the nestling plumage. It is not conceivable that this bird would have both a postjuvenile and prenuptial molt before returning to us in its breeding dress, and it therefore indicates that the young bird, at least, molts only once after leaving us, and that at this molt it acquires the plumage of the adult.



BRONZED GRACKLE

Photographed by H. and E. Pittman, in Manitoba

Notes from Field and Study

A Wren Nest Tragedy

On May 30, 1916, I noticed the Wrens had not built in the hanging Wren-house, so I cleaned it out thoroughly. In less than an hour a pair were hard at work and soon the nest was finished and a Wren was on the nest.

Then one day I noticed great excitement. Madam would not go in or near the house. Her mate coaxed and coaxed with continual singing, from house to tree and over again. Such scolding from her and twittering and fluttering!

Finally she flew to the roof of the house but only for a second, then away, then back again. Then she tried the porch, a hole in a post, anywhere for a nest, then back to the house and in. She looked as though she was trying to pull the nest to pieces. Then away and back, pulling at it three different times. Then both flew away, and I never saw them again.

Upon investigation I found she had pulled out her three eggs, put tiny holes in them, and thrown them on the ground. Has any one ever heard of a bird doing that before?—M. C. NISBET, *Irvington-on-Hudson, N. Y.*

The Cape May Warbler

I was interested in reading in the April, 1917, issue of BIRD-LORE the statement regarding an increase of the Cape May Warbler.

For several years past I had not seen one of these Warblers, but during May, 1916, they appeared in comparatively large numbers in and near Boonton, N. J.

This was true of many others of the Warbler family; those uncommon in former years being present in large numbers, particularly Bay-breasted and Blackburnian Warblers. There were days when numbers of the birds were to be seen in the trees and shrubbery, and it was possible to get very close to them so

that they could be easily identified, even without the use of glasses.—EDWARD G. KENT, *Jersey City, N. J.*

An Experience with an American Bittern

One day last fall a newspaper in a nearby city printed a story of a "strange bird in a battle with two savage bulldogs" and told how the local constable, whose aid was sought to shoot the bird, captured it by throwing a blanket over the bird's head and identified it as a "Spanish Corseva," common in Argentina.

It sounded like a real nature-faking story, yet thinking some member of the Heron family was in trouble, I traced it, after considerable effort, to an old stable, where, in a dark corner, I found an American Bittern.

The bird may have hit a wire or the branch of a tree and fallen to the ground in someone's dooryard, where it was attacked by the dogs, but it was useless to try and make the people believe the bird had not been the aggressor and first attacked the dogs.

The Bittern did not appear injured, though weak from lack of food, the whole corn offered by its captor not being relished as a substitute for small fish and frogs, so I thought to take it to the shore and let it go where food was plentiful.

I had often heard stories of wounded Herons striking at people's eyes. Nevertheless, I was taken unawares when the Bittern, with a lightning-like thrust, gave me an exhibition of how she speared fish. Fortunately, the blow fell on the end of my nose and again within an inch of my eye, causing the blood to flow freely, and after that I kept my face out of range.

I wanted a photograph of the bird before letting it go, so focused my camera on a rock where I placed the Bittern and jumped back, planning to press the bulb before she flew away, but I was much sur-

prised to see her 'freeze,' when picture making became easy.

While I remained still, with a movement so gradual as to be almost imperceptible, the Bittern would stretch out her neck and turn and start to walk away, but at a call or a clap of the hands she would 'freeze' again, and then repeat the stealthy effort to slink away.

At times the wings would be dropped to the ground and the crest feathers

luck on her nest journey southward.—
WILBUR F. SMITH, *South Norwalk, Conn.*

Killdeer in Connecticut

During the fall of 1916 while repairs were being made around the dam of one of the local reservoirs, the water was lowered about eighteen inches. This laid bare a great area of lake bottom at the upper end where the water is normally



AMERICAN BITTERN

raised, and when facing me the mass of breast feathers would be fluffed out, giving her a formidable appearance which I imagine caused her captor to run for the blanket.

After getting all the pictures I wished, I gave her a toss into the air and she flew off and alighted on the shore at the edge of some salt-water grasses, and so perfectly did the yellows and browns of her feathers blend with the yellowing grasses that she seemed to vanish from sight, and I left her hoping she would have better

shallow and where a rich growth of vegetable and minute animal life had existed. In fact, the conditions very nearly duplicated those existing around western prairie sloughs in the summer as the water slowly recedes by evaporation leaving exposed such a wealth of food for the waders.

It was late in the afternoon, October 29, while out walking that we first noticed these unusually favorable conditions and saw at that time, besides a Solitary Sandpiper and one Greater Yellow-legs, a

flock of five Plover which I was reasonably sure were Killdeer, but, unfortunately, the glasses were at home and in the waning light I could not be positive of such an important identification.

On the next visit to the lake, November 11, we were delighted to find the Plover still there and this time were able to make sure that they were really Killdeer. Having known them in Dakota it was like meeting old friends, and it was with the keenest pleasure that I followed them from one muddy flat to another as they nervously and cautiously kept their distance.

It was hard to estimate the total number correctly. While on the flats, all would 'freeze' as we approached, and but for an occasional low nervous *dee* we might well have passed them by, so well did their colors blend with the ground, but just so near, and then with plaintive notes of alarm a bunch of ten or twelve would jump as one bird to fly and wheel in close formation and alight at a safe distance. Often on our going forward a second bunch would fly from the same vicinity, and I was able to count at one time twenty birds on the wing which I feel was very near the total frequenting the lake.

Once a cover of low thick bushes near the shore enabled me to approach close to some feeding birds, and it was indeed a treat to watch at one time so many of these birds now so rare in the East.

Now that I have the Killdeer on my list as an old friend new found in Connecticut, I have one great pleasure of like sort to look forward to, and that will come when I first find on our hills that splendid bird, familiar in the West, with all the romance of the Open in his voice, the Upland Plover.—ROBERT S. JUDD, *Whitneyville, Conn.*

A Bird on the Head

I wonder if a belated bird-story will interest you and the readers of BIRD-LORE? Last summer while standing by our R. F. D. mail-box I was suddenly aware of the distressed cry of a small bird,

and almost instantly felt it alight on the top of my head. Another instant it was gone, and I at once felt a rush of air and the flap of larger wings, and was amazed to see a Sparrowhawk pursuing a very small bird which took refuge in shrubbery close to the house. Now why did the little bird light on my head when there were vines, trees, and shrubs all about and the mail-box screened by golden glow taller than my head?

I add another story quite as true as the first:

A friend sitting under our trees was given a carnation which was placed in her hair. Very soon after a Ruby-throated Hummingbird fluttered over her and dipped into the flower a number of times.

—L. B. PETTEE, *Salisbury, Conn.*

A Note on the Barred Owl

On January 8, 1916, I visited a bird food-box which had been erected in a rather extensive wood-lot not far from town. On this trip I noticed a small gray mass containing bones at the foot of a tree a few feet from the food-box. Near this were the tracks of a squirrel, with wing marks in the snow on each side. On account of limited time, the gray mass was not examined but the place was kept in mind. On January 31, a special trip was made with the idea of identifying the Owl, which had been seen at a distance a couple of times before. It was found a short distance from the food-box, but its shyness made a close approach difficult. However, this time I managed to get close enough to obtain a good, clear view and found it to be the Barred Owl.

Now, as my curiosity was aroused concerning the food of the Owl, I proceeded to the place where the pellet had been seen and examined it. The greater part consisted of small bones and gray fur, in a compact mass. Eleven more pellets were found beneath the same tree. These, together with the first one examined, were found to contain the bones of either one or two rodents. The same place was visited on March 24, 1917. This time forty pel-

lets were examined—thirty-four beneath the same tree and six under a neighboring one. All of these contained the bones of rodents. One particularly large pellet had the jaws of five rodents in the mass. Of the remaining pellets, one held the jaws of three rodents; several, two; and the rest, one each. One pellet had a large snail-shell crushed while another one had a small shell, whole. A couple more had the remains of a single crawfish in addition to a rodent each. Eight pellets, composed of fur and rodent bones, were examined March 31. Judging from the shape and coloring of the various jaw-bones, I should say that at least three different kinds of rodents had been devoured.

Of all the pellets that were examined—sixty in number—not one yielded the remains of a bird.—W. EDWIN COON, *Conneautville, Pa.*

The Goldfinch

For days, one January, the Goldfinch note was in the air. When the first bird who sang it came near enough to show the green of his bronze coat and sang his summer song in his winter voice, I winked, grinned, kicked one foot with the other, went through all the wakening exercises one dares with a bird fifteen feet away. I was surely awake.

He faced me with a breast without a sparrowy mark, turned upon me a back of softest greenish bronze, and just as I opened my heart to him the tree over my head was filled with his brethren.

Looking him up in my meager library, I find that, like the poor, him "we have always with us." Like the poor, also, he endures much, lives on little, and keeps cheery under a stress that sends many of his stronger, better-equipped brethren to a softer clime for the winter.

Next time you see him in July, harvesting thistle and dandelion seed, in his summer dress of gold, set off by his jaunty cap and epaulets of nature's own black, or when he dances over your head to the tune of his own *per-chick-o-reel* try to think of him in sober bronze, cap and

shoulder-straps gone rusty, and with the same diverging flight, fighting a winter's blast.

Like the summer girl in her winter suit, the fluff all gone out of her attire, but like her, too, the summer's gold and sweetness stored in the stronghold of his heart to bubble out in the very face of the winter. It was the same cheery song, only just gone mellow ripe.

The children came calling, one July day—

"Oh, Auntie, come quick! Some Goldfinches are killing a little green bird!"

Four male Goldfinches and one female were making a kaleidoscope of the ground in front of the house. We reached them, finding the little green bird limp, though warm. One male went away but the war continued between the other three over the dead body of the little lady.

Withdrawing a little way we watched. The situation soon disclosed itself. Two of the birds would light by the dead beauty, and how the feathers flew. I could scarcely hold the children back from storming the little savages. She had a knight of her own color, however, "whose strength was as the strength of ten because his heart was pure."

It was pounce and dart! Dash and counter-dash, for a minute or two and the two brigands retired to the 'phone wire across the street. Sir Galahad lit beside his lady fair, fluttered about for a minute or two, and then took station on the light wire overhead. The same program was carried out at intervals for half an hour. If one of us went near or picked up the dead bird her champion hovered around, and when we laid her down, satisfied himself no new harm had come to her and then took up his watch, the marauders looking on.

Toward night their interest seemed to wane, and they finally went away singing *per-chick-o-ree* as blithely as though murder had not sullied their hearts.

Not so Sir Galahad. Late bedtime found him still at his vigil. Morning and noon of the next day found him there. But in the afternoon he was gone. The boys

buried his bride—was she? It was their mating season. Had the belle of the flock, after near a year's flirtation, made choice of the truest heart of them all? Or had the sister of the household displeased by her mating?

How quickly we read romance into all that has its seeming. One thing I know, when a flash of gold, or a merry *per-chick-o-ree* brings the dastards to mind, the picture fades, but Sir Galahad in his lonely vigil stays. He has done what he could to redeem the reputation of his race.—
THERESA WOOD, 4071 Sisson St., East San Diego, Calif.

A Leaf from a Rose-breast's Life

One Saturday afternoon in June, 1913, I discovered a tiny birdling in my front yard. It was very scantily covered with yellowish down and so weak it could flutter only a few feet along the grassy lawn. I did not know what it was until, after retiring to the front porch, I saw a mother Rose-breasted Grosbeak intently guarding it, from a buckeye tree nearby. She did not feed it often; perhaps it was too young to need much food.

The next morning, on stepping out onto my kitchen porch, where a plum tree reaches over the doorstep, I was surprised to see both father and mother Grosbeak within a few feet of my head, watching me intently and apparently with great concern.

Usually they are shy birds, but they did not fly, and approached very near my face. Meanwhile I was looking in every direction to discover the baby bird. The parents seemed so distressed I turned to go in the house, when, there behind me, huddled in the corner of the porch, was the young bird. I hurried indoors but they evidently feared for its safety and soon removed it.

Later in the day another little one, weaker than the first, appeared on the front lawn watched over by the mother while the male guarded the older one in a rose bush in the back yard.

Monday was cold and cloudy. Soon

after noon it grew dark and a storm threatened. Mother Grosbeak guided her little one under a hard maple tree nearby, and, a foot or more from the ground, onto a dead branch that lay under the tree.

The foliage of the tree was very dense, a light shower would not have reached the little bird. But the storm was very severe. The wind blew violently and rain poured in torrents. The dead branch shook and the heavy rain beat upon the tiny form; but it remained motionless except as the wind shook the branch. Later the wind grew less, but rain continued, and I think it rained all night. It was very cold.

Early next morning I looked out with little hope of seeing my bird, but there it was, just where it had been all afternoon the day before. It was still raining and the mother watched from the tree above.

About eleven o'clock the rain ceased. Then the object of my solicitude hopped down as lively as you please, evidently calling for an early dinner. Oh, the wisdom of that mother! Had she permitted her little one to remain on the ground it would have been washed down the terrace to the driveway and carried out to the street gutter.

For about twenty hours the little nude creature clung to its perch, apparently as lifeless as the branch on which it rested, and was pelted by the cold storm.

That afternoon the whole family disappeared. I thought I had lost them, but was delighted about two weeks later to see all four of them again in my trees. Young birds, like little children, love the water. Again and again they came to drink or splash in the pan a few feet from my kitchen window. I greatly enjoyed watching the change in the plumage, especially of the male bird, as the weeks passed. The family life of the Grosbeaks seems ideal. They surely enjoy each other, and I saw the four in my trees almost daily the rest of the summer until migrating time.

Bird students tell us of seeing so many dead bodies of little birds after a storm.

The wonder is that so many survive the storms that are often frequent during the nesting season.

I had a large bittersweet vine winding spirally round the trunk of a large tree.

One day, when a storm was threatening, a mother Robin coaxed her little one onto the trunk of the vine. She tried to have it go farther up around the tree. When she did not succeed, she hopped up beside it and pushed it up the spiral stalk until it was around on the east side and close to the trunk. The storm soon came from the west but the little bird was safe and dry.
—L. ELIZABETH CLARK, *Galesburg, Ill.*

Unusual Visitors at Feeding-Table

With photographs by the author

For several years we have maintained a feeding-table in our back yard. We live in a town of about five thousand inhabitants, and our home is just two blocks from the center of town, a corner lot 60 by 160 feet. We have four peach trees, two plum trees, one cherry tree and a large honeysuckle vine on back porch. On lot adjoining, and along our line, is a grape-arbor and a walnut tree, making just a reasonable amount of perching for the birds.

The feeding-table is 2 by 3 feet, sup-

ported by a bracket attached to a post, under the outer branches of a peach tree. We find it convenient for the birds to have a perching-place before alighting on the table, yet the Blue Jays and Woodpeckers often fly direct to the table. On two of the trees, and on top of the post on which the table is attached, we have suet. For several winters we have had for regular boarders, Chickadees, Titmice, Cardinals, Blue Jays, Woodpeckers, Nuthatches, Song Sparrows and Robins.

Last winter and this we have had two unusual visitors, and for this reason I send you this article, together with the photographs, so that none may doubt the truth of this statement. On February 6, 1916, a Towhee appeared on the table. He seemed very shy at first, but on finding plenty of feed whenever he wished, he soon became accustomed to the surroundings and remained with us until in March, when it became warmer, and he no doubt started out to find his mate.

We have found several male Towhees wintering in this locality each year in the timber where they could find food and shelter, but we have never known one to appear in town at a feeding-table.

On December 18, 1916, a Mockingbird appeared on our feeding-table. To say that we were delightfully astonished is



MOCKINGBIRD EATING WALNUTS

putting it mildly. We knew at a glance it was a Mockingbird, but we lost no time in calling in our bird-loving friends, all of whom were delighted to know that we had such a rare winter guest. He very quickly made himself at home and was

would watch their chance to get their share of the food when the Mockingbird released his vigilance. When he wants his meal all must go but the Blue Jay which he did not try to conquer, although he shows a disposition to fight if he dared.



A TOWHEE ON THE FEEDING-STAND

soon sole owner and overseer of the coveted feeding-table. He seemed to have a distaste for the bright colors of the Cardinals for he took great delight in chasing them out of the yard. He tried to drive the Red-bellied Woodpecker from the table, and a battle ensued such as we have never witnessed among birds. The Red-bellied was not going to be driven, as he had several years' prior claim. They would flutter in air, facing each other, drop to the post and branches of the tree, the Red-bellied with mouth open, and one time he hung with back down for probably a minute waiting for the next thrust, but the Mockingbird finally won. All the birds

He moves out of the way but never runs. At this writing, March 12, 1917, he is still very much at home.

The Mockingbird is an occasional summer resident in this county (Clinton). Possibly three or four pairs are reported every summer from widely separated localities in our county, but why this one remained over or where it came from will always be a mystery to us. He eats walnut kernels, crumbs, and suet. We have never seen him eat sunflower or any kind of seed.

This winter we have had at our table the following birds: male and female Hairy, male and two female Downies,

one male and female Red-bellied, two Flickers, eight Blue Jays, two Bronzed Grackles, five Song Sparrows, one Towhee, eleven Cardinals, one Mockingbird, one Carolina Wren, one White-breasted Nuthatch, two Tufted Titmice, three Chickadees, two Robins, and have seen in the yard but not at the table, one Sparrow Hawk, one Screech Owl, and one Brown Creeper.

I have a 22 rifle and with BB caps keep the English Sparrows thinned out. I raise the window slightly or open the door just enough to see out, and the explosion is all inside the house, so that the report does not alarm the other birds. I have killed Sparrows not a foot from the other birds and not frightened them. They look down at the fallen Sparrow and wonder what's happened.

The Cardinals, Song Sparrows, Mockingbird, Robins and Towhee roost in vines on the back porch. The Cardinals and Song Sparrows sing all winter. We have heard the Song Sparrow singing happily when the thermometer registered below zero. The last few days the Towhee sings in a low voice almost constantly, a rolling almost continuous warble reminding us of the whisper-song of the Catbird, possibly a little louder. He returned to us again this year about the time he came last year. We feel certain it is the same bird, for he went immediately to the feeding-table and made himself at home.

Bird-lovers who have not provided a feeding-table for the birds are missing the greatest pleasure in their study.—H. H. HENDERSON, *Wilmington, Ohio.*

An Iowa Cardinal

For two winters—fierce Iowa winters when the mercury may sink to sixty degrees of frost—the Cardinal has neighbored with us. Against the background of our Iowa snows, with his fiery tropic plumage, he is as *outré* as a palm in Iceland.

The 'Kentucky Cardinal' of James Lane Allen is a shy and timorous bird. He conceals himself in the cedars and shrubbery of the garden. *Peace, peace, peace* he softly sings. But my Iowa Car-

dinal is more aggressive than the Blue Jay or the English Sparrow; his obtrusions are dramatic and spectacular; his *tzip, tzip, tzip*, is a song of battle. Almost any morning at breakfast we may see him perched upon a branch of Japan lilac just outside the window. Thence he launches himself, a flaming thunderbolt, directly at us. Hurtling through six or seven feet of air, wings and tail-feathers wide outspread, he strikes the upper window-pane and falls to the snowy sill. He gasps for breath, his little bill opening and closing. His tail twitches with excitement. With an occasional *tzip, tzip*, he hops along, pecking fiercely at the glass. Then flying straight upward he strikes the upper pane a glancing blow and whirls back again to his perch upon the lilac. Discouraged? Not at all. Try, try again, is his maxim. For hours he gives us an exhibition of aeronautics as fascinating as that of Sea Gulls astern the ship. And all so close at hand. I wish I had a movie film of it. And many a summer afternoon as I am working in the garden I hear the red bird assaulting a basement window screened by a tall barberry.

When the Cardinal began rapping at our dining-room window at breakfast we imagined that he was asking for admittance. He is trying to come in out of the alien cold to his native Louisiana warmth, to shelter, to food, and good friends within. To test this theory we left the window open, but the game was off, the Cardinal flew away.

We failed to understand our Cardinal because we did not look at things from his angle. With my eye at his precise viewpoint on the lilac branch, I found that he could see nothing within the room; the glass was not an invisible barrier, but a broad and perfect mirror. What he saw was another Cardinal, a rival, alert, aggressive, his black beady eyes aflame with war, his wings stirring for attack. The Cardinal may confuse the objective and the subjective, but his strategy is classic. He believes in a swift offensive. He strikes and collects his justifying causes later.

I wish I knew what the English Sparrow thinks who often sits on an upper limb of the lilac and watches the battle with his head cocked on one side, an impartial neutral.

"What has the long war brought you, my fiery terror, but headache and disappointment! That other Cardinal, why attack him? he hasn't disturbed you, he doesn't keep you from sitting in the sun. Isn't the world wide enough for you both? Look at me, I raise family after family of Sparrows every summer, and yet there is room for all!"

The war at the window-pane has gone on now for two years. The Cardinal still is attacking his own image, attacking his own hate, his own dreams of conquest, his own belligerency. Fortunately, the object of his attack is a phantom image and not a peaceful neighbor of flesh and blood. Yet I fear for the consequences. Stout as is my Cardinal's little bill, it seems that it must be broken by the multitude of blows he strikes the unyielding glass. If it is an ancestral habit, this of beating against barriers, a Lamarckian might explain the blunt bill of the species by impact. Just so Rudyard Kipling explains the long-drawn trunk of the elephant as the result of tension. But even if my Cardinal's bill is not broken or worn to a frazzle, even if his little neck-bones are not dislocated by the furious blows he strikes, what must be the results in character? Battle, I fear, is already a fixed idea. The Cardinal sees red continually; he has gone war mad. Yet in the past, in Kentucky, it would seem that the Cardinal, according to James Lane Allen, was a peaceful bird, a lover, so to say, of philosophy and poetry. It can not be our Iowa environment which has so changed him. No, safe in the interior of the continent Iowa is pacifist to the core. It must be the cosmic *krieglust* which has obsessed the Cardinal. He will never cease fighting until, quite worn out in battle, his black flag still wrapped above his breast, he lies dead upon the ground. —WILLIAM NORTON, *Mount Vernon, Iowa*.

Migration on the Great Lakes

I have spent about fifteen years of my life on the Great Lakes and have always taken a great interest in the migratory birds we had as passengers every spring and fall.

I have counted as high as 1,000 song-birds on a 500-foot steamer at one time. They come aboard during a fog, and if it turns to rain in the night, most of them perish from cold. I hit upon a way of saving thousands, during the fifteen years I spent on the Lakes, and I'll tell you how.

In the spring of 1903, on the steamship "F. B. Morse," we anchored near the Apostle Island group in Lake Superior, in a heavy fog. We had the biggest bunch of migratory birds on the vessel I had ever seen. I counted over one thousand, just before dark. As second mate I had the anchor watch, from 6 P.M. till 12.

About 8 o'clock a cold rain began to fall, and the poor birds, unable to find shelter, fluttered around the electric lights thicker than flies. They soon began to fall on the deck exhausted, and that is their 'finish' unless you can get them right away into a warm place. I went back in the galley and got a small basket and started picking them up. As soon as I had the basket full, I carried them into a steam-heated room and dumped them on the floor. I picked up over four hundred birds that night, and every one survived.

We arrived in Ashland about daybreak, and I went in to look at my charges before turning them out. They were a varied bunch. Warblers, Wood Thrushes, Finches, Song Sparrows, and High-holders, a few Catbirds, and others I couldn't classify, not being very well versed in ornithology.

I shall never forget how beautiful the Wood Thrushes looked. I counted just six of them, and they were not at all afraid when I picked them up.

After feasting my eyes on them a few minutes I opened the door, and in two minutes the room was emptied. I felt more than repaid for the little trouble I

had when I saw them on their way across the bay.

After this I saved birds' lives every spring and fall in the same way. I think a good deal could be done by erecting bird-shelters on the steamers plying the Great Lakes. This would only cost the owners a few cents and would save thousands of our feathered friends every spring and fall. Just a little box between the hatches here and there, where they would find shelter from the rain would do. The birds get very tame while aboard a vessel and will almost eat out of your hand.

A few minutes on the cold steel deck in a rainstorm soon 'keels' them over, so let us start a campaign among the vessel owners to have some bird-shelters built.—

LEONARD A. ERICSON, *Duluth, Minn.*

Summer Birds of Swope Park

This report is based upon a census of the summer birds of Swope Park, Kansas City, Mo. This park covers an area of 1,332 acres. The greater part is well-wooded upland with hills having rather steep, rocky slopes and ragged limestone cliffs.

A small stream, the Blue River, flows through the park and furnishes some alluvial flood plain. Other smaller streams leading into the river furnish moist, well-wooded regions suitable for certain species. Other parts of the park are quite dry in summer.

Parts of the park are frequented by great crowds of people, while other rather extensive areas are quite secluded and offer shelter for the more retiring species.

The census was begun the second week of June, after the migrants had left. It was conducted by carefully traversing a different section each morning and listing the singing male birds, every effort being made to avoid an overestimate of the numbers.

A total of 2,026 male birds was listed, representing 74 species. Supposing each of these were paired, there would be over 3 adult birds to the acre in the park.

The birds that love semi-seclusion head

the list, while the more sociable species like the Robin, Thrasher, House Wren, Rose-breasted Grosbeak, Chipping Sparrow, English Sparrow, and Orioles are fewer.

The Indigo Bunting heads the list with 164 male birds; the Tufted Titmouse, 158; Black-capped Chickadee, 153; Red-eyed Vireo, 86; Downy Woodpecker, 76; and Kentucky Warbler, 74, come next in order listed.

Nine species of Sparrows and their relatives were listed, with 402 male birds. (English Sparrows were not included in the census.) There were 12 species of Warblers with 244 males, the Kentucky Warbler leading with 74 males; 5 species of Vireos with 102 males, the Red-eye taking the lead; 5 species of Flycatchers with 156 males, the Great-crest being the most numerous; 3 species of Woodpeckers with 150 males, the Downies taking the lead.

The Turkey Vulture took the lead among the raptorial birds with 16 pairs. (Probably underestimated, the rock ledges being quite favorable for this species.)

Conditions in the park are unfavorable for water birds, 3 Green Herons being the only representatives of this group.

A few other comparisons include: 41 pairs of Cowbirds, 73 Blue Jays, 42 Crows, 6 Whip-poor-wills, 1 Nighthawk, 27 Acadian Flycatchers, 22 Scarlet Tanagers, 8 Summer Tanagers, 4 Bob-white.

There were more Cerulean and Parula Warblers than Robins or Bluebirds; more Red-bellied Woodpeckers than Red-headed Woodpeckers. The Wood Thrush leads in the Thrush family with 55 singing birds.—ALBERT E. SHIRLING, *Kansas City, Mo.*

Notes on the Varied Thrush at Bellingham, Wash.

Of the winter birds here the Varied Thrush is perhaps the most abundant, equaling, if not surpassing, in numbers the Rusty Song Sparrow, Oregon Junco, and a few others which can be considered common.

The birds appear in the woods along Whatcom Creek about the middle of November (November 14, 1914), and depart in April (April 26, 1914; April 16, 1915). Although they are supposed to be "resident in coniferous forests throughout the state from sea-level to limit of trees," I have never observed one here during the summer months.

Upon their arrival the birds are shy and do not allow a very close approach; later, however, especially if the ground is covered with snow, they can be frequently found among the houses in the city, sometimes even coming upon the steps if food is placed there.

In the woods the birds are usually found upon the ground, searching for food among the leaves. When one approaches they rise quickly, uttering a short *clut*, and fly into the nearest tree. Though their size and shape are much like that of the Robin, their position and manner when perching are different. They assume a stiff, leaning-forward attitude, the stripes on the sides of the head exaggerating the length of the bird. If the observer persists in following them, they will always keep a safe distance ahead.

I have heard nothing that might be called a true song from these birds, though call-notes are numerous. Perhaps the most common one which, strangely, is heard most frequently on rainy days, is a drawn-out *ü*.

The winter of 1915-16 was an unusually severe one for this part of the state, and consequently a large number of the birds were deprived of their customary amount of food. As there were many birds in the back yard, I placed some boards upon the snow and covered them with bread crumbs. A few minutes later a half-dozen birds were there. One Varied Thrush, the largest and most conspicuously colored, immediately drove the others away and took possession of the food. As this continued for some time and the others were deriving no benefit from the food, I divided the food and placed half of it farther away. Now, when the birds returned (for they had flown out of the

yard when I approached) the fun began. First one would dart down and seize a piece of bread. At once, like a flash, and with the feathers on his head raised in anger, the tyrant would be after him. At the same time, another which was waiting for just this opportunity, swooped down on the other food-board. By the time the Thrush could get back the other would be gone, and with it a piece of food. Thus back and forth for nearly half an hour the fight for possession continued, the others always the victors, for invariably they secured a crumb. Finally, he tired and flew away, and the others, without fighting, ate the food. Later some English Sparrows arrived, but, as they did not disturb the Thrushes they were not disturbed themselves.—HAROLD ANDERSON, *Bellingham, Wash.*

The Western Meadowlark and Other Birds near Edmonds, Wash.

Usually each spring and autumn flocks of Western Meadowlarks, ranging in number from twenty to forty, come to our farm called 'Fruitdale.' But neither last spring nor at the present time (October, 1916) do I see more than one or two of these birds at a time under the apple trees or in the fields. I attribute the reduction in their numbers to the heavy snows which covered the ground in January and February, 1915.

During the snowy weather we set a table in the rose-garden, only a few feet from the house, and on top and beneath it we scattered grain and apples. Daily, for more than five weeks, we saw various ones of the following birds (those named first came in largest numbers): Varied Thrush, Red-shafted Flicker, Junco, Song Sparrow, Towhee, Robin, and Chickadee. Several times we saw Brewer's Blackbird, Yellow-bellied Sapsucker, House Finch, California Quail, and Gambel's Sparrow. One weak Meadowlark came now and then. It stood about, apparently trying to pick up the grains of wheat when undisturbed by Varied Thrushes or Flickers. One day, in a grass-plot cleared of snow

for the chickens, I saw the same Lark, or another, probing in the wet grass for food. —MRS. EUGENE D. LINDSAY, *Edmonds, Wash.*

The Barn Owl's Voice

A person once described as 'abominable' the night noises made by Owls, and though true bird-lovers will never agree with him, it would have to be admitted that the Barn Owl is no 'true songster.'

After listening night after night to the harsh screams, and even louder growling, rattling noise he can make, sounds which in the dark hours fairly make the shivers jump up and down one's spine, I can well imagine that woods could seem haunted and that, in the silent flopping flight of the big whitish bird, any superstitious person could see a ghost or almost any uncanny being of the visionary world. Like young Crows, the young of the Barn Owls receive the care of one or both parents for a long time after they can fly, and during all this period, as well as earlier, they make their strange clamor at feeding-time.

As I write this—August 25—a number of their weird rasps come from nearby trees. I have grown to like the sounds. They began at dusk when out of the swamp stole one of the parents, like a white shadow, straight to the hollow in a partly blighted chestnut tree that stands alone in the pasture. The old Owl circled the tree; then out flew a young one and then another and another until five shadowy white forms flopped apparently aimlessly around and around the pasture, amid screeches, which on other evenings I have heard half a mile and which are simply inimitable. This has happened nearly

every evening throughout August and September in the years I have spent here.

It is one of the old Owls that makes the growling rattle which, reverberating among tree trunks, sounds almost like a menagerie let loose. The sound seems usually to be made while the bird is flying with, or to, its mate. When coming toward one it is truly terrifying, particularly if in some gloomy recess of a wood. The Barn Owl itself is such a queer-looking creature that even country boys look upon it with dread, and Crows awake into a perfect frenzy when they find it. And yet was there ever a creature more innocent of meaning offence to man or bird? Every disgorged pellet of fur, bones, and teeth which I could find has been examined without discovering a sign of feathers.

Mice, destructive little creatures, almost fill the bill-of-fare, and these Owls are very clever in hunting them. A 'mousey' spot in a field is silently quartered again and again, with intervals between during which the Owl sits on a tree, fence, or building nearby and listens and watches. Mice come out of hiding after danger has apparently passed and sooner or later are caught off their guard. Down swoops the circling Owl, then up again and off to the waiting young who see the dangling mouse from afar and raise their voices in joyous clamor. It is not a beautiful sound, but to the thrifty farmer it heralds better, bigger crops. The old half-dead chestnut tree, unsightly as it is, has a lease on life as long as it can harbor Barn Owls.—JOSEPH W. LIPINCOTT, *Bethayres, Pa.*

THE SEASON

III. June 15 to August 16, 1917

BOSTON REGION.—Following a late, rainy spring, the summer proved typical of New England—ideal summer weather in June, periods of intense heat, high

humidity, and drought in July relieved by the thunder showers of early August.

The nesting birds laid full sets of eggs which, in the main, hatched successfully,

in consequence, presumably, of the abundance of moisture. The Baltimore Oriole and the Warblers were so delayed in arriving on their nesting-grounds that they built ten days or so later than normal. The Woodcock, however, arriving on time, were not delayed in nesting and, in spite of the backward season, brought out their broods at the usual date.

A marked diminution in numbers was noted in the following breeding species: Wood Pewee, Warbling, Yellow-throated and Red-eyed Vireos, and Yellow Warbler. The Wood Pewee and the first two Vireos have been becoming gradually less numerous in this region for some years, but until this season the Red-eyed Vireo and the Yellow Warbler have shown little or no change in numbers. Throughout the season the song-birds sang little. The species which were present in increased numbers were the Ruby-throated Hummingbird, Field Sparrow, Nashville Warbler, and House Wren. For the last few years the House Wren has been steadily regaining its former haunts in eastern Massachusetts from which it was driven, some forty years ago, by the House Sparrow.

The first evidence of the autumn migration which I saw in Lexington was a Tennessee Warbler on August 11.—WINSOR M. TYLER, *Lexington, Mass.*

NEW YORK CITY REGION.—Possibly the chief feature of this summer hereabouts, and one generally noticed, has been the late continuance of the song-season of many species of birds, perhaps correlated with the unusual luxuriance and freshness of the foliage in mid-August. For instance, Mr. John Treadwell Nichols heard individuals of Bob-white in full song at Mastic, L. I., on August 20; Song, Chipping, and Field Sparrows, August 19; Towhee, August 18; Wood Pewee, Grasshopper and Henslow's Sparrows, Scarlet Tanager, and Robin, August 12; Wood Thrush, August 11; Long-billed Marsh Wren, August 5; Pine Warbler, July 30; and the writer noted Song Sparrows still singing in northern

New Jersey on August 19 and House Wrens on the 12th. All these are late dates, especially for the Wood Thrush and Robin, which usually stop singing by the first of August, and for the Pine Warbler, usually silent by the end of June.

One of the few definitely determined breeding-stations of Henslow's Sparrow on Long Island is at Mastic, where Mr. Nichols noted this year an apparent extension of the occupied area to points a mile and a half further north and four miles further west.

Very welcome visitors have been an unusual number of American Egrets. What is most probably—to judge from one slightly drooping leg—the same individual that was the last to leave Van Cortlandt Park last October, has returned there, and there are several other records from Mastic, Quogue, etc. Mastic further notes several Little Blue Herons.

The southbound shore-birds have been arriving on time, with Dowitchers and Willets as near the city as Long Beach. Two Pintails and a Mallard at Mastic on August 12 are the earliest records for Long Island. On the other hand, none of the small land bird transients regularly present by mid-August has been reported.

—CHARLES H. ROGERS, American Museum of Natural History, *New York City.*

PHILADELPHIA REGION. — Normal weather conditions prevailed throughout June and July, with the exception of heavy rainstorms which commenced on July 9 and continued with little intermission until the 12th. During this time three and one-half inches of rain fell. The cold May weather set back to some extent the nesting operations of some of the late migrants. A normal number of young seemed to be present in the woods and fields, however. The only setback being caused by the storms above mentioned, just how much native birds suffered I can not state, but I can say with certainty that young House Sparrows were killed in large numbers. I have noticed that these storms are more severe on House Sparrows than on native birds.

About June 20, I noted Purple Grackles, Starlings, and Doves roaming about the country for their daily ration. At this time these birds commence to assemble in a definite roosting-place at night, and as autumn approaches and the birds increase, these roosts become the rendezvous of great numbers of Grackles, Starlings, Robins, Doves, and other birds.

Mid-July usually brings the first flight of Swallows, or, if we live along the seacoast, the first flight of shore-birds may be noted. I noticed the first flock of Barn Swallows this year passing over on July 24. A few days later I heard the migratory lisp of some lone Warbler. I have often found the Northern Water-Thrush to be the first real fall migrant of the Warbler family. I have observed it the last week in July, but not this year. This bird seems to be a sort of forerunner of the vast host of Warblers that pass southward during the months that follow.—J. K. POTTER, *Camden, N. J.*

THE WASHINGTON REGION.—The aftermath of this spring's remarkably late and irregular migration extended well into June. Nearly all the late migrants remained beyond their usual time of leaving, and several broke the record for the lateness of their stay.

Those of the latter category are as follows, the dates in parentheses being the latest previous dates of departure:

Least Flycatcher, June 2 (May 20, 1904); Gray-cheeked Thrush, June 3 (May 31, 1907); Chestnut-sided Warbler, June 2 (May 30, 1891); Bay-breasted Warbler, June 5 (May 27, 1888); Black-throated Green Warbler, June 10 (May 30, 1907); Magnolia Warbler, June 4

(May 31, 1909); Mourning Warbler, June 7 (May 30, 1907); and the Rose-breasted Grosbeak, June 3 (May 30, 1907).

A few of the other transients that remained into June, and much later than common, with, in parentheses, the dates on which they have been in previous years latest seen, are:

Blackburnian Warbler, June 2 (June 3, 1907); Black-poll Warbler, June 8 (June 16, 1907); Canadian Warbler, June 2 (June 2, 1907); and the Tennessee Warbler, June 3 (June 6, 1910).

Of our usual summer Heron visitors, the Little Blue Heron appeared on July 21, when Mr. Francis Harper saw four in the white plumage at Dyke, Va., which date is much earlier than ordinary, though the earliest is July 16, 1904. The American Egret and the Great Blue Heron were reported on July 29 from near Arlington, Va.

A few birds have been more than ordinarily numerous this summer, enough so to draw comment from local observers. This applies particularly to the Cedar Waxwing, the Bob-white, and the Purple Martin.

Early in August a large roost of Purple Martins was discovered in one of the parks in the city of Washington. At the present writing the birds are still here in large numbers, and, on account of the unusual interest of this occurrence, further details will appear in our next report.

As the writer was absent from Washington during practically all of the months of June and July, almost all of the notes above given have been furnished by Mr. and Mrs. L. D. Miner and Mr. Francis Harper.—HARRY C. OBERHOLSER, *Biological Survey, Washington, D. C.*



Book News and Reviews

A STUDY OF THE INCUBATION PERIODS OF BIRDS: WHAT DETERMINES THEIR LENGTHS? By W. H. BERGTOLD, M.D., M.Sc. The Kendrick-Bellamy Co., Denver, Colo. 8vo. 109 pages.

Dr. Bergtold bravely attacks a problem which has ever aroused the interest of ornithologists, by assembling all the available facts and theories relating to it. This evidence, with the many attempts which have been made to determine its significance, he weighs carefully, and finally presents his own conclusions.

The authentic incubation periods recorded vary from ten days in the Cowbirds, Bobolinks, certain Warblers and some others, to as many as fifty-six or fifty-eight days in the Emu and sixty days in the Black-eyebrowed Albatross.

To account for this wide difference in time is the object of Dr. Bergtold's studies. Lack of satisfactory data concerning many of the factors involved prevent him, he writes, from presenting other than tentative conclusions.

While admitting that the incubation period "is loosely related to the size of the species, and still more loosely to the size of the egg," Dr. Bergtold believes that this period is primarily determined by the *temperature of the bird*. The existing information in regard to the temperature of birds indicates that the 'lowest' forms (that is, those most nearly related to their reptilian ancestors) have the lowest temperatures (averaging 100°-104°) while the 'highest' birds have the highest temperatures (averaging 106°-110°). Here, apparently, we have a physiologically reasonable explanation of why the higher birds (Thrushes, Warblers, Finches, etc.) have the shortest incubation periods.

Dr. Bergtold has assembled more information concerning this fascinating and important subject than has before been available in a single volume, and his work marks the starting-place for all

future investigators of the phenomena he so ably discusses.—F. M. C.

THE WAY TO STUDY BIRDS. By JOHN DRYDEN KUSER. With nine colored plates by Louis Agassiz Fuytes. G. P. Putnam's Sons, New York and London. 16mo. xii + 85 pages.

Somewhat over thirty years ago there appeared a popular book entitled 'Our Birds in Their Haunts.' It was followed, a few years later, by such less ambitious but possibly more effective guides to bird-lore as 'Fifty Common Birds and How to Know Them,' 'Our Common Birds and How to Know Them,' 'Birds Through an Opera-Glass,' etc. From that day to this the subject of bird identification has claimed the attention of many authors, culminating (with discoveries in color printing) in inexpensive pocket keys and guides with excellent colored figures of every species of bird known to inhabit the area concerned. Nevertheless, with that fine enthusiasm for his method of presentation, without which most books would never have been born, Mr. Kuser tells us, "For the beginner to learn avian identification is at present hopelessly complicated and unnecessarily discouraging, because of the requirement to wade ignorantly through a heterogeneous mass of terms and descriptions, or to go bird-hunting without the remotest idea of what he may expect to find most common or most easily identifiable in the special locality in which he searches."

Mr. Kuser writes of fifty common land-birds from "New York City as a center." His method of arrangement is seasonal, "twelve abundant permanent residents" being first treated. Then follows a chapter on 'Note-keeping' and another on 'How to Use the Key' which is given at the back of the book. Chapter V includes "The fifteen most abundant Summer Residents," and Chapter VI "The Fifteen

next Common Summer Residents;" Chapter VII deals briefly with 'Nests;' Chapter VIII, with 'Transients;' Chapter IX, with 'Migration Data;' Chapter X, with 'Winter Residents;' Chapter XI, with 'Winter Feeding;' Chapter XII, with 'Books, Publications, Societies,' etc.; Chapter XIII with 'Protection, Preservation, and Propagation;' while Appendix A contains a 'Key' to apparently the commoner land- and water-birds of the Middle States and Appendix B is a glossary. There is no index.

Mr. Kuser has made good use of his eighty-five pages, and his cordial invitation to bird-study will, we hope, be accepted by the many persons who desire just such an introduction to the subject as he here presents.

Nine full-page colored plates by Fuertes add greatly to the beauty, value, and interest of the book. Our interest is especially aroused by the Frontispiece, of a House Wren which appears to have placed its nest in a gourd having a diameter no greater than the length of the bird!—F. M. C.

BIRDS OF THE CAMPUS [of the Western Illinois State Normal School, Macomb, Ill.]. By CHAS. W. FINLEY, S.M. *Normal School Quarterly*, No. 30, June, 1917. 28 pages; 12 half-tone plates.

This is an exceptionally interesting addition to the growing number of publications dealing intensively with the bird-life of a restricted area. Its value lies not alone in the original information which it contains, but in its usefulness as a guide to the students who, in the course of time, will live in the locality of which it treats. Furthermore, the method in which the author presents his data seems well designed to arouse interest in his subject and to stimulate further investigation.

An introductory paragraph sums up the results of the observations recorded. They were made between February 21 and July 22, 1916, on a tract of about 63 acres. During this period 110 species were observed, of which 24 were found nesting. "In all 208 nests were built in which were

deposited 467 eggs, 260 of which hatched. Sixty-three of the young birds were destroyed before they were old enough to leave the nest, which leaves 195 successfully reaching that age."

These facts are presented in detail in the body of the report, together with full data on the migration, and a number of photographs showing nesting-sites, nests, and birds.—F. M. C.

Ornithological Magazines

THE AUK.—The July issue chronicles the lifework of the late Prof. F. E. L. Beal in an opening article written by Mr. W. L. McAtee who has prepared a fitting tribute to one of the older generation of ornithologists. Professor Beal's contributions were mainly to economic ornithology, and he rounded out a quarter century in the U. S. Biological Survey.

Messrs. P. B. Philipp and B. S. Bowdish record their observations on the nesting of 'Some Summer Birds of Northern New Brunswick,' some of the rarer Warblers and the Philadelphia Vireo being among them, and Mr. V. Burtch records the 'Nesting of the Florida Gallinule' at Branchport, N. Y. Both articles are illustrated with half-tones, and the description of 'An Improvised Observation Tent' by Dr. R. M. Strong is also illustrated. A short paper 'Field Notes on the Seriema (*Chunga burmasteri*)' by Mr. H. S. Boyle throws light on this curious South American bird.

Many readers will be interested in 'Miss Lawson's Recollections of Ornithologists' by Mr. F. L. Burns. She tells us a little of Wilson, Ord, Bartram, Bonaparte, and others.

A valuable contribution is by Mr. F. S. Hersey on 'The Status of the Black-throated Loon (*Gavia arctica*) as a North American Bird.' In spite of this species being recorded in no less than sixteen states of the United States and in many parts of Canada, Mr. Hersey finds there are just *three correctly identified specimens*, all from Alaska. If so many mistaken identifications can occur in a well-

marked species, what hope is there for subspecific records—'sight' or any other kind! We may well take the lesson to heart.

Mr. H. S. Swarth describes in 'A Revision of the Marsh Wrens of California' a new race, *Telmatodytes palustris æstuarinus*, and Mr. H. C. Oberholser in 'Notes on North American Birds, II' reinstates several races that have not been recognized in the A. O. U. Check-List. Mr. Oberholser also presents 'A Synopsis of the Races of *Bombicilla garrula*' recognizing one for Europe, one for Asia, and one for North America. Mr. H. C. Brimley contributes his records of 'Thirty-two years of Bird Migration at Raleigh, North Carolina'—165 species with much information and exact dates.

One may browse with interest among the several departments that fill the closing pages of a remarkably varied issue, and we may well wonder if we really know anything about birds when we find questions as to how tree-nesting Ducks get their ducklings down to the water and as to what species regurgitate, and as to other matters equally important, all open to doubt.—J. D.

THE CONDOR.—In the opening article of the May number, Dixon gives an interesting account of 'The Home Life of the Baird Sandpiper (*Pisobia bairdi*)', a species which breeds north of the Arctic Circle and winters in Argentina and Patagonia. This paper, illustrated with figures of the nest and eggs and a map of the breeding-range of the bird, is based on observations made in 1913 and 1914 between the mouth of the Mackenzie River and Point Barrow. The abundance and tameness of wild Ducks in the refuge on Lake Merritt, Cal., in the heart of the city of Oakland, is brought out by W. W. Richards in a brief note accompanied by four striking photographs showing flocks of Canvasbacks, Baldpates, Sprig, and Coots in the immediate vicinity of city residences.

Kennedy discusses 'Some Factors Involved in the Nesting Habit of Birds,' and Oberholser reviews 'The Status of *Aphelo-*

coma cyanotis and its Allies', recognizing eleven forms of Jays in the *californica* group, all of which, except *A. cyanotis* and *A. insularis*, are subspecies of *A. californica*. Mrs. Bailey concludes her paper on 'Birds of the Humid Coast' with an account of the species in the bracken and notes on the Band-tails. A review of ornithological work in progress by various bird students is given by the editor, and the number closes with the annual 'Directory of the Cooper Ornithological Club'. The total membership of the club is now 601, including 7 honorary members.

'The Condor' for July contains five general articles, the first two of which are devoted to habits of birds, one on 'The Ospreys of the Yellowstone,' by M. P. Skinner, and the other on 'The Magpie in Southeastern Washington' by Lee R. Dice. J. H. Bowles describes 'The Winter Migration of 1916-17 in the Northwest' which was marked by unusual numbers of Great Horned Owls, Snowy Owls, Goshawks and Bohemian Waxwings.

The last two papers comprise local lists. Under the title 'Observations on Some Fresno County Birds,' Swarth contributes notes on sixteen species supplementary to Tyler's papers on the same region. This article is followed by an extended account of 'Some Birds of Central Oregon' by Alex Walker, containing notes on 139 species, the result of observations made in 1913, 1914, and 1915. Among the brief notes are records of nine Fork-tailed Petrels (*Oceanodroma furcata*) obtained at Sunset Beach, Orange County, in May and June 1916, and three Baird's Sandpipers collected at Del Rey, Los Angeles County, Cal., August 17, 1916.—T. S. P.

Book News

'THE Winnetaska Bird Charts' or rather bird-cards are designed to enable the field student readily to record all that he may observe about an unknown bird.

There are cards for water- as well as land-birds. They may be obtained from the publisher, Dr. John B. May, Cohasset, Mass.

Bird-Lore

A Bi-Monthly Magazine

Devoted to the Study and Protection of Birds

OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

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Bird-Lore's Motto:

A Bird in the Bush Is Worth Two in the Hand

THE Editor desires gratefully to acknowledge the many cordial expressions of goodwill and appreciation which have come to him indirectly from contributors to BIRD-LORE's 'Conference.' Our errors rarely pass unnoticed, but whatever may be especially worthy of commendation is usually taken for granted. Contact of Editor with reader is, therefore, apt to be of a somewhat discouraging nature, and it is consequently most reassuring to receive this unexpected outpouring of loyal support of the magazine and warm-hearted endorsement of its efforts to "promote the study and protection of birds."

A CIRCULAR letter recently issued by E. W. Nelson, Chief of the Biological Survey of the United States Department of Agriculture, to the field naturalists of the Survey, deserves far wider circulation than, as an official document, it is likely to receive. While it relates primarily to mammals, Mr. Nelson states that "as regards the desirability of giving more attention to studying the habits of the species" what he writes about mammals applies "with equal force to birds." Mr. Nelson calls attention to our ignorance of many important phases of the life-histories of even our commonest mammals and urges the field naturalists of the Survey to "make special efforts to obtain all the information possible concerning the habits of the species in the territory visited."

"The study collection of the Biological Survey," he writes, "has now become so well supplied with series of specimens representing the commoner species that a considerable part of the time of the field investigators will be more profitably spent in obtaining more detailed information on the life-habits of these species than in largely increasing the number of specimens."

This is an epoch-making sentence in the history of North American mammalogy and ornithology. Specimens, more specimens, and then more specimens has heretofore been the motto of museum expeditions, whether sent out by government or private institutions. That the collecting and classifying of specimens is the first step in the study of the species is beyond question. But the gratification of the collecting instinct, the fascination of the hunt, and the necessity of securing some tangible result in return for the time and money expended have all combined to turn the field naturalist into a collector rather than an observer.

The capture of the specimens left neither time nor opportunity for a study of the species; while their preparation often required the effort that might have been employed in recording the observations one had chanced to secure.

With the issuance of Mr. Nelson's letter we see the dawn of a new era in the study of the birds and mammals of regions which have been more or less thoroughly 'collected.'

Coming from the head of an important Government Bureau, where strict accounting must be made of funds appropriated by a none too generous Congress, it may be accepted by those responsible for allied institutions, as an authoritative statement that not only the 'skins' of birds and mammals, but also a knowledge of their habits, has an actual cash value.

Hereafter, let us hope, the success of the field naturalist, even in countries the fauna of which is still imperfectly known, will be measured, not by the size of his collections, but by the contents of his note-books.

The Audubon Societies

SCHOOL DEPARTMENT

Edited by ALICE HALL WALTER

Address all communications relative to the work of this department to the Editor, 67 Oriole Avenue, Providence, R. I.

ON IMPROVING METHODS OF TEACHING BIRD- AND NATURE-STUDY

More and more deeply a feeling is coming to thoughtful educators, as the great war steadily takes its toll of men trained as teachers or scientists, that the ranks must be filled in the near future by members of a younger generation, by boys and girls now in high school or preparatory institutions. The question arises as to whether these youthful scholars will attain a broad and careful outlook upon the field before them, and become sufficiently well fitted for the tasks awaiting them to take up and carry through the work of men who have left the schoolroom or investigator's laboratory to aid their country in the world-wide struggle for liberty.

What can we do *now*, in the midst of so much outward strife, to improve methods of teaching and to bring the standard of scholarship in nature-study to a higher level? We can do *this*: actually exert ourselves to see and understand more of what goes on about us in the world of nature. The simple exercise, which follows, describing a sand spit, suggests some ways in which a more intimate acquaintance with the interrelationships of a very circumscribed area of plant and animal communities may be made. One serious trouble with present methods is the *detached* presentation of facts about nature. Bird-study has long been popularly taught by the simple method of identifying one bird after another, usually by plumage, less frequently by song or flight, and even more rarely by observation of habits.

This is a most inadequate method at best, since birds are so bound up in their life-histories with other forms of life, particularly with vegetation and insects that the detached method in reality fails to give the proper background for their activities or an adequate presentation of the part they play in the so-called balance of Nature. When high-school teachers are satisfied to lay aside a certain prejudice about college and university methods on the one hand, and grade-school methods on the other, the question of raising bird- and nature-study to its rightful place can be much more fairly met. One method should underlie all phases of this work; namely, the method of *getting at the truth*.

In the kindergarten and grades, children can learn to know animals and plants in communities just as well as in detached groups, or one by one without reference to relationship to their environment. It takes thought and time to see the world as it really is, but how much more, for example, a bird means to

the observer if he follows out its daily routine from feeding-area to nesting-area, and discovers where its associates are, what food it selects, what enemies it avoids, and what friends it makes! A diagram of the ordinary activities of animals found on the sand spit devised by an instructor in marine ecology is well termed 'The Whirlpool,' for the relationship of the plants and animals of the different zones found there is so intricate as to suggest not only a ceaseless intermingling of life, but also an interdependence beautifully adjusted to the requirements of each individual organism.

Make a beginning this school-year by calling for lectures of scholarly grade, bird- and nature-study books of wide and truthful outlook and, above all, help teachers in every possible way to attain the highest standards by the best means.—A. H. W.

JUNIOR AUDUBON WORK

For Teachers and Pupils

Exercise XXXV: Correlated with Etymology, Mechanical Drawing and Observation

THE SAND SPIT

[NOTE.—The data for this study have been taken in part from a paper, entitled 'The Animal Ecology of the Cold Spring Sand Spit,' by Dr. C. B. Davenport.]

"On a narrow *spit* of sand between the rocks a dozen little girls are laughing, romping, and pattering about." —KINGSLEY: Two Years Ago. ii.

In studying geography, it is quite likely that you may have been told that "a small point of land running into the sea, or a long, narrow shoal extending from the shore into the sea" is called a *spit*, and, no doubt, the use of this common word in such a sense seemed strange to you. Had you taken pains to look up the etymology of *spit*, a much clearer idea of its meaning would have come to you. Spit is two words, in reality, of quite different origin, although both go back to Anglo-Saxon, old Dutch, German, Icelandic and early English, and not to Latin or Greek. With the word spit related to *spittle* and *spew*, and in the modern sense to *saliva*, we have nothing to do, for the word applied to a narrow point of land running out into the sea comes from a different source. Although this word spit, like the other, is of early Dutch and Anglo-Saxon origin and related French, Italian and Spanish sources, it comes from words originally meaning a roasting-spit, a deer's horn, or the branches of a deer's horn, a spear, pike, lance, a wooden peg, a tapering point. Remembering that the ancient roasting-spit was a slender, sharply pointed stick or bar, we see how apt the application of the word is to a long, narrow neck of land or sandy bar thrust into the sea.

In a modern poet's verse you will find the word used in connection with *beach*, a more common feature of shore landscape:

"But Hermod rode with Niord, whom he took
To show him *spits* and beaches of the sea."

—MATTHEW ARNOLD: *Balder Dead*. iii.

A year ago, you may remember that we had a picture of "the inner harbor." Beyond this nearly land-locked harbor extends the larger outer harbor, which joins the great Sound and through that the Atlantic Ocean some ninety miles from the point to be described. Between the inner and the outer harbor is a sand spit. In fact, the harbors would be one were it not for this narrow strip of sandy shore which so nearly separates them. It almost seems as if barely enough space was left open for the tide to run through or an occasional boat of small dimensions.

The spit at first sight looks commonplace and of little interest, a stretch of sand, some rather scanty beach-grass, and one or two wind-tossed shrubs to break its monotonous level. In length it is a little more than a third of a mile, and its varying width ("80 meters at its western end" and "15 meters at its eastern end"), which averages about 40 meters, or 131 feet, gives it the appearance of a tapering point. Along its center, lengthwise from west to east, the sandy soil is heaped up gradually by débris which eroding winds wear away from the bluffs on the western coast of the outer harbor, and south-bound currents carry as far as the protected area where the outer harbor joins the inner. Rising a little above the beach edge on the north side and the inner edge which is covered with marsh grass, thriving abundantly on the muddy shore-line of the inner harbor, this slightly higher crest of the spit has been called "the desert area" to distinguish it from the pebbly outer beach and the muddy, grassy inner shore-line. Upon looking more carefully at this surprising point of land, one finds that the sand on different parts of it is either finer or coarser, according to its location. In fact, one might spend much time studying the geological formation found here before being able to describe the spit accurately. The animals and plants too distributed over the sand spit vary much more than the casual observer would expect, and their number exceeds by far any hasty estimate.

At falling tide may be seen the *lower beach*, which remains covered at high tide. There are also at certain times unusually low tides, called "spring tides," when more of this part of the beach with its rich marine life is exposed for a brief period almost in plain view. A large annelid worm lives here, called *Nereis limbata*, which means daughter of the sea-god Nereus, having a frill of limblike appendages along its sides. More common worms are found in greater abundance. The primitive vertebrate *Balanoglossus* is occasionally met with here in the edge of the "shallow sea." There are, "*sessile*" forms of life, both plants and animals, as well as "*crawling*,"

"burrowing" and "swimming" animals living on the lowest tide-levels of the outer beach. Along the lower beach proper, plant and animal life must struggle hard with the constantly changing tides, and here, as one might judge, there are fewer forms existing. Many tiny insects (*Collembola*) of peculiar habits are found at this level while a little higher up the familiar horseshoe crab comes to nest.

There is much complication in the daily life of some of the animals living on the lower beach, for those which are air-breathers must move elsewhere when the tide is high. Many an hour may be profitably spent watching their movements.

Above the lower beach follows an *upper beach* strewn with débris from the incoming tides along its lower margin, and joining the "desert zone" of fine sand and stiff, sparse beach-grass along its upper edge. The *upper beach* might well be termed an old curiosity shop of Nature, for here are found the flotsam and jetsam of the sea. By one scientist it has been described as the "graveyard of the shallow sea," and by shallow sea we should remember, is meant the lowest low-tide area. Walking along any beach we have all wondered no doubt how the things which we picked up got there, smooth bits of wood or pebbles soft to the touch with constant wearing by the waves, old bottles, bits of boxes or lumber, sometimes parts of ships, seeds, pieces of sea-weed, flabby jelly-fishes, embryo-cases of skates, and certain dead insects which have been drowned, probably by being blown out of their course and cast into the sea. Most of these insects, we are told, that have been found on the sand spit are leaf-eating by habit, like the destructive Colorado potato-beetle and the beneficial ladybugs. Since much of this débris, both plant and animal matter, is edible, animals of scavenger habit are attracted thither, which accounts for the presence of herbivorous beach-fleas, rove-beetles, and a tiny white earthworm, as well as carnivorous ants, flesh flies and carrion beetles of various kinds, one of which is called *Necrophorus* from its habit of burying dead prey in which it lays its eggs. There also occur dermestids in larval form, those tiny "skin-eating" beetles, some kinds of which are so destructive in museums and elsewhere in carpets and sometimes even upon bacon.

Added to this strange assortment of creatures and things along the upper beach, are still other forms of life, predaceous by habit, that is, preying upon living animals. Such are the sand-white running spiders and robber flies, the tiger beetles, ant-lions and familiar Barn Swallows, which find a rich feeding-area along this narrow line of the spit.

Nearly up to the storm-bluff line of the upper beach, where beach-grass joins sand, may be found here and there a wandering grasshopper, almost white in this environment but capable of becoming much darker if removed from its sandy habitat, a few crickets, and sometimes an occasional song-bird in bits of jetsam lumber. Here on the outer beach, too, come the omnivorous Crows in some numbers, to glean morsels of sea-food for themselves and young.

Their sagacity is well illustrated by their actions on a summer's afternoon, when bathers preëmpted the beach, both at its eastern and western ends. Circling about, ready to alight at the tip of the spit, as is their wont, the presence of row-boats and people, supposedly enemies, caused them to turn, reconnoiter, and finally to select a space midway along the beach where, no doubt, continued observation on many other days, when bathers frequented only the ends of the beach, led them to feel free from attack. This same company of Crows, if ever so slightly aware of the approach of a human being when feeding on the inner harbor at low tide, take fright and depart long before their less suspicious companions, the Green and Black-crowned Night Herons, are disturbed.

Mussels and mud snails no doubt attract the Crows to their favorite feeding-ground near the *tip of the spit*, where the outer beach joins the inner mud-flats, held fast against the inrushing and outgoing tides by thick masses of tough marsh-grass (*Spartina glabra*).

Coming up now to the storm-bluff and "*desert zone*" of the spit, one finds vegetation and animal forms of life which are quite similar to those some distance inland. Only a few typical shore forms of plants and practically no marine animals are found, although scarcely half a stone's-throw brings one to the outer and inner tidal zones. Plant-lice, ants, various leaf-beetles, spiders, dragon-flies, crickets, and an occasional wasp or butterfly spend their life-cycle on this narrow line of vegetation. The Spotted Sandpiper comes here to nest in the fine sand, pulling a few strands of beach-grass over its simple home as shelter. This summer a large nest of dead beach-grass was discovered, which some larger bird had fashioned and used, a domestic Duck probably, or, possibly a wild bird whose identity may be proven by the fuzzy blackish feathers left in the nest with two barred rusty, white-and-black contour feathers. A delightful mystery this, because the location of the sand spit makes some inviting probabilities doubtful of acceptance without visible proof. Now and then a Kingbird finds its way to the stray clumps of stunted bushes on this tiny "*desert*," or a small company of Goldfinches race by in search of weed-seed and chicory which creep into byplaces on the western end of the spit. One day a Kingfisher sought a low, precarious perch on the tip of an old log, which successive tides and winds had pushed well up off the beach. Stranger yet, a Spotted Sandpiper, probably the mother bird, actually clung in a perching attitude to the top of a low mullein stalk from which available height she anxiously watched her single newly-fledged nestling, now hiding in the grass and calling piteously at every turn.

From the inner beach, where Sparrows of various species lurk, flies up now and then a weak-voiced sharp-tailed Finch, to a branch of one of the straggling shrubs on the "*desert*." Down in the muddy bottoms of the *Spartina*, where most of their time is spent, live communities of lively fiddler crabs and slow "*plant-feeding*" snails. Along this inner edge, too, where a half-dry beachlike

pathway runs inside the area of marsh-grass and mud, a pair of Mourning Doves are wont to feed, flying down from woodland pastures a hundred feet or more higher up. Song Sparrows, Catbirds and, more seldom, Purple Grackles visit the spit, the two latter usually along the beach. During the migration season, it is not uncommon to hear the Yellow-legs calling as they fly over, or to catch the sweet whistle of the much rarer Upland Plover, or to see the white breasts of a flock of hurrying Tree Swallows. Among many delightful memories of the Sand Spit, one stands out never to be forgotten, the vision of a small White Heron, pausing in the early morning on the outer beach before seeking a more sheltered feeding-ground. Such stray visitors from the South are becoming more frequent. This season as well as last, a large American Egret spent some weeks in a neighboring harbor and the Little Blue Heron, also white or nearly so in the immature plumage in which it usually appears, has been recorded nearer by.

It is always with a feeling of regret that one leaves the sand spit, for life is so full of daily interest there, one can always learn something new. A glance over the outer harbor may reveal a stray Tern (*Sterna hirundo*) basking placidly on the stake of a buoy, or a flock of Laughing Gulls, mayhap, tossing up and down the windy waves, while inshore stalk the sober Herons, eagerly scanning the flats of the inner harbor for eels or other toothsome prey. A knot of Fish Crows sometimes finds its way hither, and when the Great Blue Heron flaps majestically over, a feeling of the endless charm of bird-study and the intimacy of Nature brings a keen joy not to be effaced by long wintry days to follow, for even then Great Black-backed Gulls come down from the North to join the Herring Gulls which throng the spit and inner harbor.

"A narrow neck of sandy bar running out into the sea"—I wonder what new discovery awaits me there when next I walk quietly along its yielding surface!

SUGGESTIVE QUESTIONS

How many feet make a meter?

Where is the meter used as a measure of length?

Why should we be familiar with it?

What does geology mean?

What is the story of Nereus and his daughters?

What is the difference between flotsam and jetsam?

Explain the meaning of etymology? omnivorous? eroding?

What other words can you think of which begin with omni—?

What is the meaning of reconnoitre? How is it used by soldiers?

Look up *Spartina glabra*.

Describe life on the different parts of the sand spit as follows:

- | | | |
|---------------|---|--|
| The Sand Spit | { | 1. The lowest low-tide line. |
| | | 2. The lower beach. |
| | | 3. The upper beach. |
| | | 4. The "desert area." |
| | | 5. The eastern tip of the spit. |
| | | 6. The inner shore along the muddy bottoms.—A. H. W. |

FOR AND FROM ADULT AND YOUNG OBSERVERS

THE BLACK-CAPPED CHICKADEE

By G. T. RICHARDS* (age 11 years)

"This scrap of valor just for play,
Fronts the north wind in waistcoat gray,
As if to shame my weak behavior.
Piping a tiny voice near by
Gay and polite, a cheerful cry,
Chick-chick-a-dee-dee—saucy note!

Out of sound heart and merry throat,
As if it said 'Good day good sir!
Fine afternoon old passenger!
Happy to meet you in these places,
Where January brings few faces.'"

—EMERSON.

The Chickadee's disposition is its great point, as its plumage is not brilliant while its song is merry, not beautiful. It is the tamest bird that we have and is very beneficial. It is fully as much of a snow-bird as the Snow Bunting and is out in all weather except during an ice-storm. "Follow the Chickadee and you will sooner or later see most of the woodland birds." It is very curious and often will alight on one's hand. It is the picture of gaiety, merry and unafraid, "chick-chick-a-deeing" encore after encore, day after day, until its first egg is laid, when it suddenly becomes silent and avails itself of every effort to draw you away from its precious offspring. It is properly a wood bird but will sometimes come to one's door to partake of a feast when food is scarce. "Its chief traits are courage, optimism, industry, activity, helpfulness, and joy in life." It seems to notice humans and does not regard us with indifference, but shows a decided interest in man-folk.

There are six to eight eggs a brood and sometimes two broods, provided that the nest is not robbed. The color of the eggs is white spotted with reddish brown. The time is eleven days to hatch and two weeks before the young birds can fly. The Chickadee nests in sassafras, birch, wild cherry, apple, plum, pine, and redbud trees, while it will use knot-holes, fence-posts and bird-boxes if there are any near. It cannot bore into solid wood, and when it makes its own hole uses dead trees or Woodpeckers' and Nuthatches' holes and any others that it can find. It deepens, enlarges, and smooths other birds' holes whenever possible. The Chickadee uses holes all the year round to live, breed, and sleep in, and seeks a hole when danger threatens.

It is very prudent and removes tell-tale chips to a distance. Its nest is nine inches deep, and in one instance a Chickadee had scooped clear to the bark of a three-inch tree. When resident (as it usually is) it uses its hole all

*Authorities consulted (but not quoted verbatim): John Burroughs' Works; Citizen Bird, by Mabel O. Wright and Elliott Coues, New International Encyclopedia; Bird Guide, by Chester A. Reed; Bird Neighbors, by Neltje Blanchan; Field Book of Wild Birds and Their Songs, by Schuyler Matthews; The Home Life of Wild Birds, by F. H. Herrick; BIRD-LORE; Educational Bird Leaflets.

the year round. Chickadees are very clean and push their young to one side when cleaning house. Their nest is made of cottony vegetable fibers, animal hair, wool, mosses, feathers, and insect cocoons. The pair take turns at sitting and, as they are the same color, one cannot tell the difference. The male feeds the female when she is sitting. When one peeps into the nest, the sitting bird makes a peculiar puffing sound which makes one draw back and shut one's eyes. Both birds sing, but the male's song is better. Their song is *chick-a-dee-dee-dee-dee* with an occasional *dee-dee* or *chee-dee*, while in spring they utter a call, *phæbe*. They have several other notes of minor importance. "Their call has a touch of unspeakable tenderness and fidelity."

Our friend eats larvæ and eggs which it gets from trees, and it has been figured that one of them destroys 138,750 cankerworms' eggs in twenty-five days. In winter the Chickadee welcomes food put out for it, such as crumbs, sunflower seed, fat pork, raw bone, suet, and corn, while a picture that I have seen shows one on a piece of cake.

To attract Chickadees, ordinary bird-boxes may be put up. The dimensions are 12 by 4 by 5 inches, and the hole should be $1\frac{1}{4}$ inches in diameter and should be near the top. No perch is needed. This house will do for Wrens also.

The Chickadee belongs to the Titmouse family, and its brothers (birds of the same genus) are the Carolina and Acadian Chickadees. Its cousins are Titmice, Nuthatches, and Verdin. Its other names are the Black-capped Titmouse or Tit. Its ornithological name is *Penthestes atricapillus*, Family *Paridæ*, Order *Passeres*.

It is a great acrobat and could turn Flycatcher if it chose. It has no harmful habits, few natural enemies, and is most often seen in dry country.

[Accompanying this unusually painstaking and interesting article is the following explanatory note from a "grown-up:" "The whole thing was entirely a labor of love, initiated and type-written by the boy because of his admiration of the Chickadee. The boy consulted, as he told me, 'everything he could lay his hands on.' If it would serve as an instructive example for other boys and girls to follow, its publication may be worth while." The kind of bird-study represented in the foregoing article is sometimes, but rarely, followed in schools where bird- and nature-study are allowed a fixed period a week. Correlated with drawing and reading, a class can, during a year's work, accomplish something very creditable in the way of compiling and putting together neatly and artistically a small booklet, illustrating birds and their habits. It seems very much worth while to give this method a trial in schools where opportunities for field-study are of necessity limited.—A. H. W.]

ANOTHER METHOD OF INDOOR STUDY

I have had BIRD-LORE for three years, and it is always welcome. I enjoy reading it very much.

I am in the sixth grade and have agriculture as one of my studies.

One day the class had a lesson on birds. We had to find who could get the

most birds and also an outline of the most important birds. I had the most birds and also the outline. Below is the outline:

Birds as:

Destroyers of Vermin	{ Jays Crows Owls Buzzard		
Scavengers	{ Gulls Buzzard Crows		
Consumers of Wild Weed-seed	{ Doves Sparrows Cuckoos	Blackbirds Larks Orioles	Cardinal Quail
Insect Destroyers	{ Wrens Orioles Quail Swallows Mockingbird Flycatchers Larks	Blackbirds Cardinal Whip-poor-will Jays Woodpeckers Doves Killdeer	Crows Owls Bluebird Sparrows Catbird Cuckoos

I have seen this spring the following birds: Redbird, Robin, Wrens, Bluebird, Catbird, Crows, Blackbirds, Sparrows, Swallows, Doves, Larks, Quail, Jays, Woodpeckers, and Hummingbird. These are most of the birds that frequent our village. Hummingbirds are not seen very often, but if you go on the bluff you will see their nests and the birds also.

I have seen quite a few nests in trees and other places. I have seen nests of the following birds: Robin, Wren, Blackbird, Sparrow, Mud Swallow, Bluebird, Mourning Dove, Blue Jay, Catbird and Woodpecker. I saw the Robin's young ones, also the Mourning Dove's young ones.—ALICE CRECELIUS (Age 10 years), *Jefferson Barracks, Mo.*

[This well-written outline suggests again the importance of *individual thinking and effort* in bird-study as opposed to the system of memorizing. A postscript added to the article contains the inquiry: "What kind of bird is very large and eats fish?" Perhaps some of our readers can answer this question. It is a good one to look up.—A. H. W.]

A JUNIOR AUDUBON SOCIETY IN AN HISTORIC SCHOOLHOUSE

By this mail I am sending you a picture of my Junior Audubon Society, also some letters written by my pupils who are members of the society. The picture was taken in our schoolyard, and I am sorry that the building does not show, for it is the oldest public school building in the United States, having been founded by George Washington, and named for him. In Alexandria

we have the boys and girls separated in the grades, and I have boys in the third grade.

This has been the most enthusiastic Audubon Society I have ever had, and I attribute it to the fact that our field secretary, Miss Katherine Stuart, lives in Alexandria, and she is always ready to help Junior Audubon Societies. We have enjoyed her visits so much, as well as the field trips she has taken with us.

Most of the members have made bird-boxes, and some of them were put up in the Soldiers' Cemetery. With a few exceptions, birds had built in all of the boxes a short while after they were put up. We have scattered a quantity of food this past winter, and while the English Sparrows have been the principal birds to feed near the building, the children have taken such delight in keeping the table supplied, I am sure they will continue the habit. Very near the school window there is an old cherry tree, which during the last few weeks of school was visited by many kinds of birds. It was a surprise to see how little the boys seemed to care for the cherries, for they preferred that the birds have them instead.

Our meetings are held twice each month, and we quite frequently have visitors. The boys make up the programs, and always preside at the meetings. Before school closed they elected officers for next year, intending to continue the work in the fourth grade.—MISS MARY DOUGLASS.

[No comment is necessary here, as the picture of the Alexandria Junior Audubon Society speaks for itself. It might be well, however, to point out that this Society intends to continue its organization and work in the fourth grade, which is what all Junior Audubon Societies really should do, instead of dropping their organization at the close of the school year in which it was formed. With a little more method and enthusiasm on the part of teachers and more initiative and loyalty on the part of pupils, Junior Audubon Societies might easily be kept up from grade to grade throughout the entire period of preparatory work.—A. H. W.]

MORE METHODS OF STUDYING BIRDS IN JUNIOR AUDUBON SOCIETIES

I

This year is the first year I have studied birds. I belong to the Junior Audubon Society. In this state of Virginia it is an offence with a fine to kill most of the birds.

Miss Stuart goes around talking to children in Virginia about birds. She has been to see us twice. Most of us have made bird-houses, and we put them up in different parts of the city.

I have an Uncle who lives in Canada, and I would like to know if there is a fine for killing birds there.—JAMES NOBLE (Age 9 years), Third Grade, *Alexandria, Va.*

II

We have an Audubon Society in my room at school, and we have thirty members. Miss Stuart came into my room and talked to us about birds. She says that the enemies of birds are the gun, the cat, and the dog. She showed us some nests that she had with her.

We built bird-houses and put them up. We put boards on the windows at school and fed the birds. The birds are beginning to get tame around my



JUNIOR AUDUBON SOCIETY, ALEXANDRIA, VA.

school now. We can look out of the window and see a lot of birds. We have studied eight birds this year.

Yesterday we had a bird contest against the fifth grade, to see who remembers the most about the birds we have studied.—JOHN McIVER JACKSON (Age 8 years), Third Grade, *Alexandria, Va.*

III

All of the boys in our society have built bird-boxes, and we had our pictures taken with the boxes. I took my box home, and in a few weeks a Sparrow started to build in it, but it did not finish. One week later a House Wren built in it. She took out all the grass that the Sparrow had put in. She tried to get a big stick inside, but she could not do it, so she went into the box and pulled on it. The stick broke and I heard her thump against the back of the house.

We enjoyed having Miss Stuart come to our meetings. She showed us a

stuffed Cardinal, a Flicker, a Cedar Waxwing, a Chimney Swift, and other birds.

On June 14, we had a bird contest against the fifth grade, and I won a book for standing up the longest in the contest. The book is about birds, and another boy in our room won a book for making the best bird-box.—LOUIS FINKS (Age 8 years), Third Grade, *Alexandria, Va.*

[These letters all suggest active, thinking pupils, who are learning at first-hand about bird-protection and bird-life in general. It might add much to the attractiveness of bird-study about the school if the English Sparrows were trapped in winter, and the lunch-counter made available for more useful species. In many places this Sparrow seems to be normal in number or decreasing, but as soon as it discovers bird-boxes and lunch-counters, it speedily preëmpts them, keeping away other birds of more desirable habits.—A. H. W.]

CHIMNEY SWIFTS GATHERED FOR THE FALL MIGRATION

I once saw in Atlanta a gathering of Chimney Swifts previous to their fall migration. I lived near some chimneys in a four-storied building that were used only for ventilation. There was a remarkable sight in early October. Scores and scores of Swifts circled around one of these tall chimneys as sunset approached. At first they flew in wide sweeps, then closer and closer, until there was an unbroken, moving, twittering ring. At every round a dozen or more would sink into the open mouth of the chimney, until all had vanished and stillness reigned. They always left so early in the morning that no one saw them depart. After October 12 they came no more.—LUCY H. UPTON.

[Readers of the School Department will welcome this brief chronicle of an incident of fall migration, from the pen of Miss Upton. The habits of the Chimney Swift are full of interest, and none possibly is more spectacular in operation than the descent of a large company of Swifts into a chimney. If you are fortunate enough ever to witness such a sight, take a watch and keep record of the number of Swifts going into the chimney each minute during the descent. Also watch the change in time evening by evening as long as the Swifts visit the chimney.—A. H. W.]

The Audubon Societies

EXECUTIVE DEPARTMENT

Edited by T. GILBERT PEARSON, Secretary

Address all correspondence, and send all remittances for dues and contributions, to the National Association of Audubon Societies, 1974 Broadway, New York City.

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Any person, club, school or company in sympathy with the objects of this Association may become a member of it, and all are welcome.

Classes of Membership in the National Association of Audubon Societies for the Protection of Wild Birds and Animals:

\$5 annually pays for a Sustaining Membership
\$100 paid at one time constitutes a Life Membership
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\$5,000 constitutes a person a Founder
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FORM OF BEQUEST:—I do hereby give and bequeath to the National Association of Audubon Societies for the Protection of Wild Birds and Animals (Incorporated), of the City of New York.

NOTICE OF ANNUAL MEETING

The Thirteenth Annual Meeting of the National Association of Audubon Societies will be held in the American Museum of Natural History, New York City, on October 30, 1917.

The first business session will be held at 10 o'clock A.M.

In the evening before, beginning at 8 o'clock, it is planned to give a public entertainment, including moving pictures,

in the main lecture-hall of the Museum. All members are urged to attend, and the public is cordially invited to all of the sessions.

It is believed that this will be an especially interesting meeting in view of the large volume of work carried forward the past year by the Association, its field workers, and its affiliated organizations throughout the country.

THE MIGRATORY BIRD LAW

The Enabling Act to give force and power to the treaty between the United States and Canada regarding the protection of migratory birds still hangs fire in Congress, although this Association and many other organizations and a great number of individuals have brought every possible pressure to bear to have the subject considered as a war measure. After intense work, the full measure of which will never be realized by any one man, the matter was finally brought to a vote in the Senate July 30, 1917. It was passed by a large majority, but thus far it has been found impossible to get action in the House on the measure. Let no one think

for a moment, however, that this bill will ever be lost sight of, as the Association and its friends are constantly in touch with the situation. Every member of the House has been canvassed and his point of view ascertained.

In the meantime, however, the Canadian Government has gone forward with its Enabling Act, and a letter recently received from Dr. C. Gordon Hewitt, of Ottawa, states that on August 29, 1917, final action was taken.

The whole fight for this treaty and its enforcement, therefore, has been won with the single exception of the final vote in our House of Representatives.

NATIONAL ADVISORY COMMITTEES

Shortly after the passage of the Federal Migratory Bird Law in 1913, the United States Secretary of Agriculture appointed an Advisory Committee to coöperate with the Department of Agriculture in the matter of preparing rules and regulations covering the killing of migratory birds. Recently this Committee was enlarged by the addition of five state game commissioners. The committee as at present constituted stands as follows: John B. Burnham, New York City, Chairman; William L. Finley, Portland, Ore.; E. H. Forbush, Boston, Mass.; Edward G. Bradford, Jr., Wilmington, Del.; Dr. William T. Hornaday, New York City; Marshall McLean, Albany, N. Y.; T. Gilbert Pearson, New York City; George Shiras, 3rd, Washington, D. C.; John C. Speaks, Columbus, Ohio; John H. Wallace, Jr., Montgomery, Ala.; Clinton M. Odell, Minneapolis, Minn.; Clark McAdams, St. Louis, Mo.; M. L. Alexander, New Orleans, La.; William R. Oates, Lansing, Mich.; W. E. Barber, Madison, Wis.; William C. Adams, Boston, Mass.; Carl Westerfeld, San Francisco, Cal.; George G. Koster, Lincoln, Neb.; E. C. Hinshaw, Spirit Lake, Iowa; Brooke Anderson, Chicago, Ill.; George Bird Grinnell, New York City.

This Advisory Committee has had various meetings, and many of their recommendations have been adopted by the

Department of Agriculture. The last meeting of the Committee was held at St. Paul, Minn., on August 29, 1917, and the Biological Survey, representing the Department of Agriculture, is now considering its recommendations. A new set of regulations are expected to be issued and signed by the President some time this fall.

After the ratification of the treaty between the United States and Canada in reference to migratory birds, the Canadian Government, by an order in Council, dated December 28, 1916, appointed an interdepartmental Advisory Board for the purpose of formulating plans regarding the protection and use of the wild bird and animal life of Canada. It is one of the duties of this Committee to advise on questions relating to the protection of birds under the treaty. This Board consists of: James White, Assistant to the Chairman of the Conservation Commission; D. C. Scott, Deputy Superintendent of Indian Affairs; Dr. C. G. Hewitt, Dominion Entomologist; Dr. R. M. Anderson, Geological Survey; J. B. Harkin, Commissioner of Dominion Forests.

It will be noted that the Advisory Committee of the United States is composed exclusively of men who have no position in connection with the Government, but the Advisory Board of Canada is composed entirely of officials.

VENEZUELA TO PROTECT EGRETS

Venezuela has recently passed a law governing the collection and exploitation of Heron aigrettes. The law provides that such feathers may not be collected except in the heronries at the time of moulting from July to November inclusive. The word "heronry" is defined as meaning one of those places near lakes, bayous, or rivers where Herons periodically come to nest. The killing or trapping of Herons is prohibited at all times and seasons.

Collectors of customs shall not permit the exportation of Heron feathers without having satisfied themselves by an examina-

tion in the presence of the exporter that such feathers are actually moulted feathers, and were not pulled from caught or slaughtered birds. As moulted feathers are easily distinguishable from pulled feathers, the Minister of Fomento is directed to furnish each custom-house with samples of feathers obtained by each process. These dropped feathers are known as "dead" aigrettes, and command a price of only about one-fifth the amount that milliners will pay for "live" feathers taken from the birds.

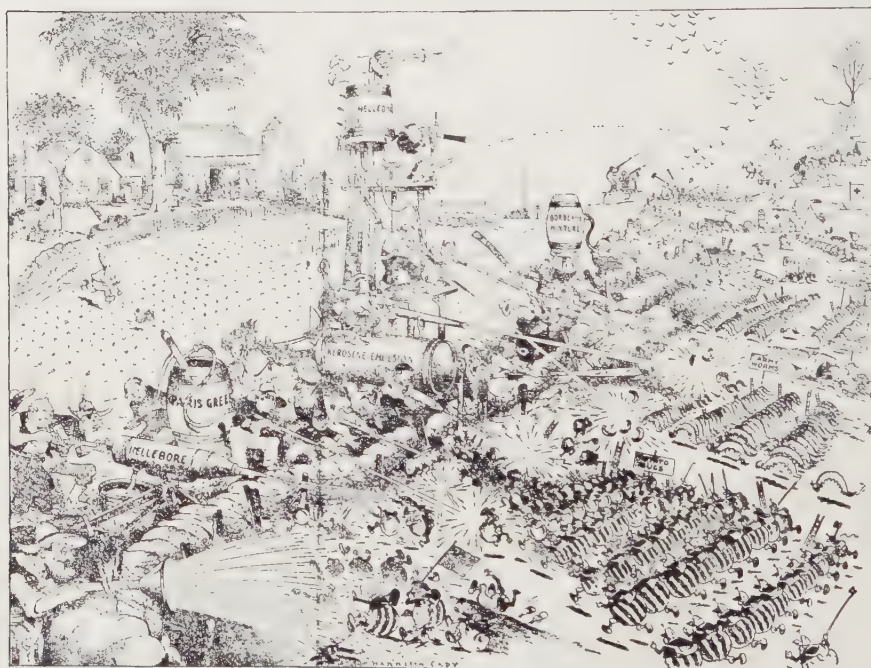
The exportation of Egret feathers, or

aigrettes, rose to be a considerable business in Venezuela. It was injured by legislation against the importation of plumage of wild birds, first in the United States and then in Great Britain, while the outbreak of war closed the Hamburg market and greatly decreased the demand in Paris. Venezuela's exports of Heron aigrettes in 1908 were valued at \$187,005; in 1909 at \$230,265; in 1910 at \$168,287; in 1911 at \$309,532; in 1912 at \$373,312; in 1913 at \$627,440; in 1914 at \$31,461; in 1915 at \$166,339; and in the first six months of 1916 at \$37,059.

These feathers come exclusively from the states of Bolivar and Apure, where

there are many bayous along the Orinoco, and many lakes remaining after the annual overflow of the plains, to which Herons and other birds resort in great numbers. The importance of the feather-trade to this district can be judged from the fact that the total population is only 100,000, and that the only other resource is the cattle business. A serious decline in the commercial prosperity of Ciudad, Bolivar, and San Fernando du Apure has come about since the practical extinction of this trade in 1914, and the people of the district have been urgent in their appeals to the Federal Government to do something to obtain the repeal of hostile foreign laws.

BATTLE FOR THE CROPS---FARMERS VS. INSECT PESTS



—Courtesy Country Gentleman

Note, that the farmers are shown also shooting the birds that are coming to help fight the insects

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Total.	\$3,206 97

Finley Coming East

Mr. William L. Finley, of Portland, Ore., the dean of American wild-life photographers, is planning to come east just after New Year's on a three-months' lecture-trip. He writes that already he has made a large number of engagements. Most bird-students are familiar with Mr. Finley's work, and tens of thousands have thrilled with pleasure in viewing the products of his marvelous exploits in securing moving pictures of western wild life.

The past summer Mr. Finley has spent much time in the deserts of southeastern Oregon, in the Stein Mountains, and in the Cascades, where he has secured an unusual number of new and interesting subjects. Bird clubs or others desiring to make appointments with Mr. Finley may address him at 651 East Madison Street, Portland,

Ore., or such communications may be sent directly to the New York Office of the National Association of Audubon Societies.

Nebraska Incorporates

The Nebraska Audubon Society was formally incorporated at a meeting held in Omaha, July 27, 1917. The present officers were reelected. These are President Solon R. Towne and Clerk Joy M. Higgins. The following were chosen trustees: Solon R. Towne, John R. Ringwait, Katherine M. Baxter, Joy M. Higgins, and Arthur L. Palmer. Omaha will be headquarters for the Society. There will be no capital stock and the corporate life of the Society will be for ninety-nine years. Preservation, propagation, and protection of native birds summarize the object and purpose of the organization.

THE FIGHT FOR SONGBIRDS

The movement so opportunely started by this Association against the killing of songbirds for food is meeting with most hearty response from many parts of the country, and calls for the cloth warning-notices referred to in the last BIRD-LORE are daily coming in from all parts of the country. Already more than 50,000 of these have been distributed. If further evidence is needed to show the urgent demand for a campaign of this sort, it can easily be furnished from the letters that are being received from various writers. One correspondent has written:

"Not so long ago I was riding in a lonely wilderness in the Guyandotte Mountains of West Virginia, and near the Paint Mountains, when I came across an Italian who had a gunnysack half filled with songbirds. I could not say anything much, because he had a gun and I was unarmed, but reported the same at the nearest point."

Another bird-lover writes:

"I would call your attention to the wholesale slaughter of songbirds here in our immediate vicinity: all foreigners being offenders. Can you not induce the county or town warden to act at once with our local police, who are ready to make arrests or coöperate to stop this dreadful economic waste?"

Another correspondent writes:

"I am doing all I can to protect the birds, but just this afternoon I saw several

boys with guns. They had a basket and were overheard to say they had a Robin. I called to them, but they went on. I saw one of them pick up a bird as it was trying to flutter away. This was in North Toledo."

A similar letter may be added:

"Yesterday my wife and I spent the day at Long Beach and came across two sets of hunters. The first set was of three men and three guns. They had shooting licenses and game-law books. They had one Lesser Yellowlegs and six or eight Sanderlings. They seemed to be decent men and were obliged when we told them the small birds came under the five-year clause of the Federal Law. Set number two were simple bird-butchers. We heard two reports and came upon them gathering up the birds. They were Sanderlings. They must have had at least twenty. One man had a bunch held between both hands, and the other the gun and three or four birds. They seemed uneasy when they saw us. My wife wanted to speak to them, but I was strongly against it since they were the kind that would probably answer roughly unless we had authority. I will gladly point out their house to a game-warden."

As long as the Association's supply of the cloth posters holds out we shall be able to distribute them gratuitously to everyone who is willing to post them where they may be read by the public.

A DANGEROUS MOVE THWARTED

Among the groups of people who were requested by Mr. Hoover, United States Food Administrator, to make suggestions in reference to the conserving of food, the hotel and restaurant owners have recently distinguished themselves.

On the first of August, representatives of the hotels and restaurants formally met at Washington, D. C., and in due time produced a set of resolutions designed to represent their wisdom in the matter of conserving food. One of their resolutions

was to the effect that the Government should urge the various states to lengthen their open seasons on fish and game. That is, they recommended that the United States Government use its influence in the various states to break down the bars of the present seasons when game cannot be killed to the extent that the shooting should be lengthened over a greater period of the year.

In considering this resolution it is well to bear in mind that there are a goodly

number of prominent hotels in this country whose record for the illegal handling of game is not an enviable one. That much money is to be made by serving game to hotel guests will be ascertained by anyone who will take the trouble to read the menus of our larger hotels where game may be sold; and to anyone who is familiar with the history of game-protection in this country, and the record of certain hotel keepers in reference to the handling of game, the real scheme which these gentlemen may have had at heart is easily revealed.

It was the pleasure of the Secretary of this Association to be invited to address the annual meeting of the National Association of Game and Fish Commissioners in St. Paul, on August 27-29, 1917. This was a very representative gathering, and the heads of the State Game Protective Departments from a large number of the states were present. This afforded an unusual opportunity to bring to the attention of these officials the move which the hotel and restaurant men were seeking to induce the United States Government to make.

As a member of the Committee on Resolutions of this game-protective con-

gress, the Secretary had the pleasure of presenting the following resolutions which were unanimously adopted by the convention.

"WHEREAS, This Association has been informed that the Hotel and Restaurant Committee meeting in Washington City on August 1, 1917, passed a resolution recommending that the United States Government urge various states to lengthen their fish and game season, and that these seasons be made uniform throughout the country; therefore, be it

Resolved, That the existing supply of fish and game is now being drawn on to an extent which should not be exceeded, and that any further draft on the supply would be an irrevocable loss to the nation; and

Resolved, further, that a copy of this resolution be transmitted to the United States Food Administrator."

The State Game Officials thus being warned, and having taken concerted action to check any move which might unwittingly be made by the Food Administrator toward further jeopardizing the wild game, it is reasonable to assume that nothing further will come of the matter.

NEW YORK CONSERVATION COMMISSION

The New York State Conservation Commission, now so successfully presided over by one of the Life Members of this Association, Mr. George D. Pratt, has inaugurated during the present administration many helpful movements that have had much to do with keeping New York in the very forefront of the various state game-warden systems.

Last January the Commission began the

publication of a monthly magazine called *The Conservationist*. It is carefully edited, beautifully illustrated, and is, perhaps, the most attractive publication issued by any State Game Department in the Union. The subscription price is 50 cents per year, and it is issued from Albany. It is worthy of a place on the library-table of every bird-lover and sportsman in the state.



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|--------------------------------|-------------------------|
| 1. CLIFF SWALLOW, Adult | 5. TREE SWALLOW, Young |
| 2. CLIFF SWALLOW, Young | 6. ROUGH-WINGED SWALLOW |
| 3. VIOLET-GREEN SWALLOW, Adult | 7. BANK SWALLOW |
| 4. TREE SWALLOW, Adult | |

(About one-half natural size)